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PROCESSING MULTIYEAR PROCUREMENT (MYP)
SUBMISSIONS — A HANDBOOK FOR
AIR FORCE PROGRAM OFFICES

Prepared for:

**United States Air Force
Business Research Management Center
Wright-Patterson Air Force Base, Ohio**

In Fulfillment of:
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PREFACE

This Handbook has been developed under a contract whose original objective was to develop a method for advance determination of multiyear procurements' (MYP) cost savings. Congress, which had greeted the revival of MYP requests with enthusiasm in 1981, grew more critical during the next two years and approved only the B-1B bomber for multiyear funding in Fiscal Year 1984 — citing lack of confidence in cost-savings estimates as a major reason for doing so. The resulting discouragement in the Project Offices — the POs — indicated that something had to be done to improve the chances for success of MYP candidates. Otherwise, Air Force POs would hesitate to undertake them in the future. The cost-savings and other benefits offered by MYPs would be lost.

The research carried out in this effort included an exhaustive literature search; compilation of a relevant data base; and a number of interviews -- with PO staff members and their counterparts in industry, on both the prime contractor and subcontractor level. We discovered that both industry and Air Force program offices would like to obtain the benefits of MYPs, but are reluctant to undertake the extensive effort involved in preparing their submission unless there is a reasonable chance they will be approved. In particular, the PO personnel felt that there is no standard format and procedure for processing MYP submissions, and that one is needed. This Handbook is the result of those discussions. It does not venture to establish a standard procedure for Air Force processing of MYP submissions, but is an initial attempt to establish guidelines for carrying out such a procedure.

We would like to express our appreciation to the many individuals who graciously gave us their time and knowledge. Particular thanks are given to Kenneth L. Birkhofer, Myron Bailey, Chesley Holloman, Fred Cheek, Major Gary Poleskey and Lt. Col. Michael Goldstein on the F-16 program; Donna Vogel, Capt. Barrett Clay, Lt. Paul Cox, Roy Wilgus, Major Kenneth Roberts and Capt. Noel Thompson on the F-101 and F-110 engine programs; Major Scott Allen on the F-16 simulator program; and Capt. Gary Rusnak on DSCS III. Our industry contacts included Norman F. Gauss and Richard Molchany on the DSCS III at General Electric Company, Frank E. Riney on the F-16 at General Dynamics Corporation, and a number of others at both the prime and subcontractor level.



We are also indebted to our technical sponsors, Major Allen and Major Poleskey, for their extensive knowledge and insight into the MYP process; and to our project monitors, Lt. Col. Robert Skipp and his predecessor, Lt. Col. James P. Weber, for their continuing guidance and help. Any errors in omission or commission of this work are solely the responsibility of the undersigned. Your critical comments will be welcomed.

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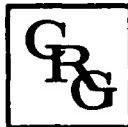
INTRODUCTION

A. OBJECTIVE

Multiyear procurements (MYPs), under certain circumstances, offer several important advantages to the Air Force and to the nation. They can reduce acquisition costs to the Air Force, promote capital investment and increase production efficiency in industry, and provide work force stability. But MYPs require a commitment, by the Air Force and by the Congress. It is a commitment that can extend up to five years into the future and involve substantial levels of funding. Quite reasonably, it is a commitment that is not made lightly. Of the 22 MYP submissions made for Fiscal Year (FY) 1985 funding, 10 were disapproved before reaching the Congress, and more were disapproved there. Only nine of the 22 were finally approved. In FY '84, only six of 16 submissions to Congress were approved.

This handbook does two things: It provides guidelines to Air Force program officers in their determination of likely MYP candidates, and it outlines a set of procedures to follow which will enhance the chances of success of MYP submissions. The preparation of a MYP submission involves a considerable effort by both Air Force Project Office (PO) personnel, and by prime contractors and their vendors and subcontractors. By the time it is completed, the contractor will have prepared proposals on both an annual buy and a MYP basis -- frequently for several different rates of delivery of the procured item -- and Air Force personnel will have evaluated them in detail, after carrying out should-cost and fact-finding activities. This extensive effort is warranted if the MYP submission is finally approved and its benefits are then actually realized. Otherwise, it is both a costly and discouraging exercise. The information contained in this handbook should help accomplish the former and avoid the latter.

While the guidelines presented here should be helpful in selecting appropriate MYP candidates and properly preparing their submissions, these guidelines are not a guarantee of success. Budget restrictions and political considerations may cause the delay or disapproval of a MYP submission. The extent to which this year's budget



contains out-year obligations for prior years' MYPs can also affect the success of a submission. Each year's budget must have a considerable degree of flexibility. Therefore, the decision to proceed with a MYP submission should not be based solely on its perceived advantages, but should take these broader considerations into account as well.

B. WHAT IS A "MULTIYEAR PROCUREMENT" (MYP)?

A multiyear procurement is a contract in which Department of Defense (DOD) planned requirements for up to a five-year period are acquired without having total funds available at the time of contract award. As such, it is an exception to DOD Directive 7200.4 which requires that all of the funds needed to cover the total cost of production of a given quantity of end items, with the exception of some long-lead-time components, must be available at the time the contract is awarded. Thus, a MYP contract is an alternative to a series of annual contracts in which the end item is procured one year at a time.

Only the first year of a MYP contract is initially funded, but the rate of production and delivery of the end item in each year of the MYP is specified in the contract. If DOD changes that rate, the contract is renegotiated. Should DOD cancel the contract, the contractor is protected by a cancellation clause which permits it to recover both recurring and non-recurring costs.

There are two major sources of cost savings resulting from MYP acquisitions: (1) the ability to purchase parts and material in "economic order quantities" (EOQs); and (2) inflation avoidance through advance procurement of parts and materials for future delivery at current prices. The procurement of EOQs, and advance buys of parts and material to avoid inflation, are not the same as the initial purchase of long-lead-time items. The latter have been long recognized by acquisition regulations, which have permitted their initial funding as a matter of necessity. The former are not purchased out of necessity, but for economic reasons. Large quantities of an item can be produced at the same time at a lower unit cost. Similarly, firm orders for larger quantities of components and parts can permit subcontractors to achieve production scheduling efficiencies and, thereby, lower costs. In a competitive environment, the cost savings resulting from these EOQ purchases are passed on through the prime contractor to the government. The



same principle holds true when materials are bought today, at today's prices, for future delivery in order to avoid inflation-caused increases in future prices.

In order to take advantage of these cost savings, the initial year's total obligational authority (TOA) must be considerably greater than it would be under annual contracting procedures. The funding profile for MYPs is front-loaded, with cost savings occurring in the later years of the procurement.

Multiyear procurements are best used for the acquisition of end items for which prior production cost histories are available. They could be used for initial production runs of an end item, but are most appropriate for the second (or third) and following procurement orders. The Air Staff has now divided multiyear contracts into three categories: small, intermediate, and major.¹

A small multiyear contract is one that involves a total procurement of \$1 billion or less, research, development, test and evaluation (RDT&E) costs of \$200 million or less; and that includes an EOQ advance procurement of \$20 million or less or an unfunded cancellation ceiling of \$20 million or less. An intermediate multiyear contract has the same RDT&E and procurement limits, but is one in which EOQ advance buys and/or unfunded cancellation ceilings exceed \$20 million. A major system multiyear contract is one that involves a total procurement greater than \$1 billion.

C. SELECTING A MYP CANDIDATE

Table 1 illustrates the obstacles which a MYP submission must overcome if it is to be approved. The first step in overcoming these obstacles is the appropriate selection of MYP candidate programs. Table 2 presents the reasons why the military services and the Office of the Secretary of Defense (OSD) rejected 10 MYP candi-

1. Bernard L. Weiss, Brig. General, USAF; Director, Contracting and Manufacturing Policy; "Policy Letter 84-11 -- Multiyear Contracting Guidance"; Headquarters, United States Air Force, Washington, D.C., 18 May 1984.



Table 1

**OUTCOMES OF MULTIYEAR PROCUREMENT (MYP)
SUBMISSIONS FOR FISCAL YEAR 1985**

<u>Multiyear Procurement Candidate</u> <u>(1)</u>	<u>Action Taken As A Result Of:</u>	<u>Service Review</u> <u>(2)</u>	<u>OSD Review</u> <u>(3)</u>	<u>Congressional Review</u> <u>(4)</u>
Air Force:				
Airborne Warning and Control System	D	—	—	—
AN/ARC -170 Radio	D	—	—	—
DSCS III	A	A	—	A
Inertial Upper Stage	A	D	—	—
F-16 Airframe	A	A	—	A
F-16 Radar	D	—	—	—
F-16 Simulator	A	A	—	D
Low-level Laser Guided Bomb	D	—	—	—
Army:				
AH-64	A	D	—	—
Bradley Fighting Vehicle	D	—	—	—
Bradley Turret Drive	A	A	—	A
Bushmaster 25mm Gun	A	A	—	D
CH-47D Modernization	A	A	—	A
5-ton Truck (M939)	A	A	—	A
Shop Equipment CMV	A	A	—	A
Tow II Missile	A	A	—	A
UH/EH-60 Airframe	A	A	—	A
Navy:				
AN/SSQ-36 Sonobuoy	A	D	—	—
An/SSQ-77	A	A	—	A
CH/MH-53E Airframe	A	A	—	A
Sealift Support	D	—	—	—
SH-60B	A	D	—	—

Abbreviations: A = Approved D = Disapproved

Sources: Columns (1) - (3) General Accounting Office, Analysis Of DOD's Fiscal Year 1985 Multiyear Procurement Candidates, (Washington, D.C.: U.S. Government Printing Office), October 25, 1984.

Column (4) The Bureau of National Affairs, Inc. "GAO Questions Fitness of Five Weapon Systems For Multiyear Procurement," Federal Contracts Report, Vol. 42, November 25, 1984, pp. 803-804.



Table 2

**REASONS FOR THE MILITARY SERVICES
AND OSD REJECTIONS OF POTENTIAL MULTICYEAR
PROCUREMENT CANDIDATES, FISCAL YEAR 1985**

<u>Candidate Rejected By:</u>	<u>Reason For Rejection (1)</u>
Air Force:	
Airborne Warning and Control System	Unstable Requirements
AN/ARC-170 Radio	Insufficient Savings
F-16 Radar	Unstable Configuration
Low-Level Laser Guided Bomb	Unstable Configuration
Army:	
Bradley Fighting Vehicle	Insufficient Savings
Navy:	
Sealift Support	Unstable Program and Cost Estimates
OSD:	
AH-64 (Army)	Low Confidence in Cost Estimates
AN/SSQ-77 (Navy)	Unstable Requirement
Inertial Upper Stage (Air Force)	Operational Failure in June 1983
SH-60B (Navy)	Unstable Requirement and Funding

Source: General Accounting Office, Analysis of DOD's Fiscal Year 1985 Multiyear Procurement Candidates, (Washington, D.C.: U.S. Government Printing Office), October 25, 1984, p.9.



dates for FY '85 funding. Table 3 summarizes the findings of the General Accounting Office (GAO), and the actions of the Congress, regarding the 12 MYP candidates which won OSD approval. These tables reveal that the primary criteria for selection of MYP candidates are the so-called "Carlucci initiatives".

1. The Carlucci Criteria

On May 1, 1981, Frank C. Carlucci, Deputy Secretary of Defense, issued a "Policy Memorandum on Multiyear Procurement." This stated, among other things, that

"For quantity production, contracts should be structured and funded wherever possible to benefit from economies of scale where such economies can be attained at an acceptable level of risk to both the government and the contractor."²

It then went on to establish six criteria for evaluating MYP candidates. These criteria are:

1. Benefit to the Government -- primarily in reduced costs without incurring undue risk.
 2. Stability of Requirement -- whereby the minimum need for the end item is expected to remain unchanged, or vary only slightly during the contemplated contract period.
 3. Stability of Funding -- in that there is a reasonable expectation that the program is likely to be funded at the contract level throughout the contract period.
 4. Stable Configuration -- wherein the procured item's configuration is technically mature and will experience only minor changes throughout the contract period.
-
2. Frank C. Carlucci, Deputy Secretary of Defense, "Policy Memorandum on Multiyear Procurement," Memorandum for Secretaries of Military Departments. Washington: D.C., May 1, 1981.



Table 3

CONGRESSIONAL ACTION ON THE DEPARTMENT
OF DEFENSE'S MULTIYEAR PROCUREMENT CANDIDATES,
FISCAL YEAR 1985

System/Subsystem	General Accounting Office (GAO) Opinion		Congressional Action On MYP Authority	
	Unsatiskied Requirement ¹ (1)	MYP Status (2)	Authorization (3)	Appropriation (4)
<u>Air Force:</u>				
F-16 Airframe	Cost Confidence	Favorable	Approved	Approved
P-16 Simulator	Cost Confidence Savings Design Stability	Unfavorable	NA	Denied (Savings, Design Stability)
DSCS III	Cost Confidence	Favorable	NA	Approved ²
<u>Army:</u>				
OH/CH-60A Airframe	Cost Confidence	Favorable	Approved	Approved
CH-47D Modernization	Cost Confidence	Favorable	Approved	Approved
5-Ton Truck (M939)	Cost Confidence	Favorable	Approved	Approved
Tow II Missile	Cost Confidence Req. Stability Funding Stability	Unfavorable	Approved	Denied ² (Funding Stability, Cost Growth)
Shop Equipment CMV	Cost Confidence Funding Stability Design Stability	Unfavorable	Approved	Approved
Bradley Turret Drive	Cost Confidence Savings Req. Stability	Unfavorable	NA	Approved
Bushmaster 25mm Gun	Cost Confidence Req. Stability Funding Stability	Unfavorable	Approved	Denied (Req. Stability Funding Stability)
<u>Navy:</u>				
CH/MH-5E Airframe	Cost Confidence	Favorable	Approved	Approved
AN/SSQ-36 Sonobuoy	Cost Confidence	Unfavorable	Approved	Approved

Abbreviation: NA = Not Available

- Notes: 1. GAO notes that none of the 12 candidates met the cost confidence criteria because firm proposals were unavailable at the time of their evaluations.
2. The Bureau of National Affairs, Inc., "GAO Questions Fitness of Five Weapon Systems For Multiyear Procurement," Federal Contracts Report, Vol. 42, November 25, 1984, pp. 803-804.

- Sources: Column (1) General Accounting Office, Analysis of DOD's Fiscal Year 1985 Year Multiyear Procurement Candidates, (Washington, D.C.: U.S. Government Printing Office), October 25, 1984, pp. 15.
- Column (2) Ibid., p. 2.
- Column (3) House of Representatives, Department of Defense Authorization Act, 1985, Conference Report, Report No. 98-1080, (Washington D.C.: U.S. Government Printing Office), September 26, 1984, pp. 8-12.
- Column (4) Agreement between the House and Senate Appropriation Committees, House of Representative, Department of Defense Appropriation Bill, 1985, House Report, Report No. 98-1086; Senate Report, Report No. 98-636, (Washington, D.C.: U.S. Government Printing Office), Sept. 26, 1984.



5. Degree of Cost Confidence -- wherein there is a reasonable assurance that the estimated cost savings resulting from the MYP are realistic and will actually be achieved.
6. Degree of Confidence in Contractor Capability -- to perform adequately and meet the terms of the contract.

The first five of these criteria were formally adopted by the Congress in the Department of Defense Authorization Act of 1982 (Public Law (P.L.) 97-86, (Section 909), which added paragraph (h) to 10 USC 2306. Thus, the head of an agency is permitted to make multiyear contracts whenever he or she finds:

- "(A) that the use of such a contract will promote the national security of the United States and will result in reduced total costs under the contract;
- "(B) that the minimum need for the property to be purchased is expected to remain substantially unchanged during the contemplated contract period in terms of production rate, procurement rate, and total quantities;
- "(C) that there is a reasonable expectation that throughout the contemplated contract period the Department of Defense will request funding for the contract at the level required to avoid contract cancellation;
- "(D) that there is a stable design for the property to be acquired and that the technical risks associated with such property are not excessive; and
- "(E) that the estimates of both the cost of the contract and the anticipated cost avoidance through the use of a multiyear contract are realistic."³

3. United States Code, Congressional and Administrative News, 97th Congress - First Session, (St. Paul, Minn.: West Publishing Co.), 1981, pp. 1118 - 1119.



A MYP submission that does not satisfy the above criteria is not likely to be approved. The last criterion — that of estimated cost savings — has been especially important. Emphasis has been placed here on the best ways in which to meet this criterion, and these are summarized in Section D below.

2. Other Considerations

Four other factors should be considered in selecting MYP candidates: (1) the extent of competition for the relevant year's defense budget from other MYP candidates; (2) the extent to which that year's budget will have already been committed to previously approved MYP obligations; (3) the extent of political support for the MYP candidate; and (4) the total defense budget level that can be expected to be approved in the initial year of funding, based on evaluations of the government's national debt and popular and Congressional attitudes toward it and the budget for defense.

The first two factors are important because of the need for flexibility in the defense budget in the event of budget cutbacks or changes in the perceived threat. Any given MYP candidate will therefore have to compete with other candidates, and the willingness to initiate new MYPs will depend on the extent to which that year's defense budget is already obligated to prior years' MYP programs.

Political considerations may be general ones, or may play an important role in a particular MYP candidate's decision. Defense expenditures increased sizably in the early 1980s, for example, so that by mid-1985 there was a popular feeling that they should be reduced. Such budget reductions can cause Congressional rejection of MYP candidates which might otherwise have been approved. This can be offset, however -- even in times of budget cutbacks -- if there is strong support for a particular MYP candidate. The B-1B aircraft, for example, had the President's strong support and was approved for a MYP acquisition. Similarly, the FY '86 budget request suddenly contained an item for 143 Northrop F-20 aircraft -- presumably because of political pressures -- despite an announced intention to reduce that year's defense budget by 30 percent.



3. Summary

From the above discussion it is apparent that the criteria for selecting MYP candidates are as follows:

- a. The candidate must meet the Carlucci criteria. The best candidates are those in their second or third production buys and for which there are detailed, historical production cost data to support the estimate of MYP savings.
- b. The candidate should be one which can compete successfully against other MYP candidates.
- c. An adequate budget for new MYP acquisitions should be reasonably expected to be available.
- d. There is political support for -- or, at least, no political objection to — the MYP candidate.

If these criteria are met, the possible benefits to be achieved through use of a multiyear procurement will warrant the expenditure of time, money, and effort needed to prepare its submission.

D. PROCESSING A MYP SUBMISSION

It may take more than three years from the time a candidate is initially considered for a MYP to the time a contract is awarded. Two years will pass from the time the budgetary estimate is first approved to the time of contract award. During this time, the degree to which the MYP candidate satisfies the selection criteria that were described above may change. Assuming it does not, the most important aspect of the MYP submission will be the validity and stability of the estimates of cost savings.

The general procedures for processing a MYP candidate are described in the AFSC supplement to the Federal Acquisition Regulation (FAR) Section 17.191. These are presented in Table 4 and are discussed in more detail in Chapter III. For the moment, however, we are more concerned with the practical procedures that must be followed by the Project Office (PO) in order to ensure that the multiyear submission will be complete and accurate in its cost savings estimate.



Table 4

**FORMAL PROCEDURES FOR PROCESSING
A MYP SUBMISSION**

In general, the procedures for processing a multiyear candidate are as follows:

- (a) Conduct multiyear feasibility study, evaluate possible buy profiles, and develop savings estimates using contractor inputs.
- (b) Document the study in a multiyear exhibit justification package and prepare initial multiyear findings.
- (c) Submit the multiyear exhibit package as a budget input to obtain up-front funds for Economic Order Quantity (EOQ) material buys.
- (d) Present the initial multiyear findings package to the appropriate authority for approval to solicit dual multiyear/annual buy proposals.
- (e) Solicit and obtain multiyear/annual buy firm proposals.
- (f) Validate initial estimated costs and savings by analyzing differences between multiyear and annual buy proposals and then comparing proposals to original estimates; document them in a validation findings package.
- (g) Submit documentation for appropriate reporting and approvals.
- (h) Award the multiyear contract. The contract may be unpriced, in the form of an expanded advance buy or letter contract, or it may be a firm definitized contract.

Source: Headquarters AFSC supplement to Air Force FAR Sup No. 17.191: as enclosed in Thomas E. Lloyd, Colonel, USAF, Assistant DCS/Contracting and Manufacturing, "DCS/Contracting and Manufacturing Policy Letter 84-16, Multiyear Contracting Guidance." Headquarters, Air Force Systems Command, Andrew Air Force Base, Washington, D.C. 20334, May 18, 1984.



Production cost estimates may be made:

1. parametrically -- based on the physical and performance characteristics of the procured item;
2. by analogy -- to other similar specific systems or subsystems;
3. from historical data -- on the cost of production of similar past procurements; or
4. by analysis of contractor data.

Of these, the last has proven to be the most satisfactory for the estimation of cost savings resulting from multiyear procurements. An acceptable MYP submission for purposes of budget input and initial findings, will contain informal but realistic contractor cost estimates, made on both an annual buy and a MYP basis. In order to obtain these estimates, the practical steps that the PO should take, at the outset, are as follows: (Note that this list implies a sole-source procurement. While the majority of multiyear candidates involve only one source, MYPs are also applicable in a competitive environment. In such cases, care must be taken to ensure that all potential contractors are treated alike.)

1. Establish early communication with the contractor.

Inform the contractor as soon as a MYP is considered.

2. Establish common assumptions.

Define the number of lots to be procured; the quantity in each; the extent of possible instability in configuration to be expected; the various rates of delivery that are being considered.

3. Ensure that the contractor gets firm information from its vendors and subcontractors.

Preliminary prices for specified quantities per year should be obtained in writing, as well as the cost savings on these quantities that will result from a multiyear procurement, and savings from EOQ buys.

4. Go to the contractor and work with it.

In order for the contractor to accurately estimate MYP cost savings, the PO must facilitate communications with the contractor to ensure its ability to respond to changing requirements.



5. Critically review the contractor's cost estimates.

The PO, frequently with the cooperation of the cognizant Plant Representative Office, should review the contractor cost estimates and critically analyze the basis for the contractor's cost savings resulting from a MYP. The ideal MYP candidate will be in current production, and detailed, relevant, production cost data will therefore be available.

6. Analyze in detail the contractor's cost-savings estimates.

The PO must examine the sources of cost-savings. Do they result from EOQ buys? From inflation-avoidance? Are there savings in manufacturing processes? In tooling? Engineering? Support equipment? Will the MYP enhance the contractor's investment in capital equipment so that savings will result from automation, the use of robotics, or other manufacturing aids?

7. Communicate disagreements to the contractor.

Areas in which the PO disagrees with the contractor's estimates of cost-savings should be communicated to the contractor and disagreements should be resolved. At times, the PO's independent audit of the contractor's production process will reveal changes that can be made to produce cost savings. If the contractor concurs and implements these changes, the cost savings may be realized.

8. Submit initial, rough-order-of-magnitude (ROM) quality MYP package.

The PO submits the initial MYP submission to AFSC, containing the appropriate exhibits (see Chapter III).

The above steps are typical of the initial phase of successful MYP submissions in the past. They were implemented on a high-production-rate program, the F-16 aircraft, as well as on the low-production-rate DSCS-III satellite program.

The difference between multiyear and annual funding profiles presents problems: multiyear contracts require greater initial funding and therefore impose a greater initial burden on the budget. Determination of the net present value of future cost savings is made differently by the Air Force, the contractor, and the GAO. This, too, presents problems which should be foreseen and addressed by the initiator of a MYP submission.



E. SUMMARY

Multiyear procurements, under certain circumstances, can provide a number of benefits to the government — the primary one of which is savings in the cost of procurement of defense systems. The best MYP candidates are those whose production costs are known and whose future requirement and configuration are stable. Approval of a MYP candidate -- by the Air Force, OSD, and the Congress -- requires detailed documentation of expected cost-savings; budget availability for multiyear procurements; and at least some political support. It must be evident that initial cost-savings estimates are realistic and will actually be achieved in the final award of a multiyear contract. In order to ensure this, initial contact with the contractor must be made by the PO, and continuing close communications must be maintained. Contractor cost estimates must be generated on both an annual and a multiyear basis, and should include vendor and subcontractor inputs. Critical examinations of costs and sources of cost-savings should be made by the PO, and, although it is not a requirement, disagreements with the contractor should be discussed and resolved, if possible.

Completion of this initial phase, and the annual and multiyear submission phases that follow it, requires analyses of the funding profiles; their net present value; and the internal rate of return resulting from a multiyear contract. The funding profile of multiyear procurements differs from the normal profile associated with a series of annual contracts. The problems caused by these occurrences are discussed in more detail in Chapter III. For now, it is simply important that the initiator of a MYP submission be aware of them.

When at all possible, it will be desirable to obtain competitive MYP proposals from more than one vendor. Experience with the competitive procurement of Pratt & Whitney F-100 and General Electric F-110 engines show that competition can result in sizable savings in costs. In another example, General Dynamics reduced its unit price for F-16 aircraft when threatened by competition from the Northrop F-20 for special mission purposes.

The following chapters of this handbook discuss these considerations in more detail. Chapter II describes the requirements for a potentially successful MYP candidate; Chapter III describes the process for submitting the candidate for approval. Detailed descriptions of relevant data are presented in the appendices.



SELECTING A MYP CANDIDATE

A. INTRODUCTION

If a MYP candidate is to have a reasonable chance for acceptance, its cost-savings estimates must usually be documented by two firm contractor proposals: one based on annual contracts, and one for a multiyear contract. The cost to the contractor in preparing these is a considerable one, as is the cost to the PO in validating the proposals, carrying out a "should-cost" analysis on site, and finally engaging in a fact-finding exercise. Careful selection of a MYP candidate, at the outset, is therefore necessary to ensure that these expenditures are warranted.

This is especially true since, in recent years, less than half of the MYP candidates proposed in any given year are finally approved. In the past, the score has been as follows:

<u>Fiscal Year</u>	<u>Number of MYP Candidates</u>			<u>Percent Approval</u> <u>(4)</u>
	<u>Initially Submitted to: OSD (1)</u>	<u>Congress (2)</u>	<u>Finally Approved by Congress (3)</u>	
1985	22	12	9	41%
1984	N.A.	16	6	38%
1983	N.A.	12	6	50%
1982	N.A.	8	8	100%

Abbreviation: N.A. = Not Available

Source: Appendix A



The 1982 approval rate of 100 percent reflected an initial enthusiasm for MYPs by the Congress as a way of obtaining reductions in the costs of defense procurements. The increase in the number of MYP candidates submitted in FY '83, however, aroused a feeling that the MYP approach was increasing too rapidly and that a slow and cautious approach to MYPs should be taken. This attitude, first expressed by the GAO, was repeated by Joseph P. Addabbo⁴ during the FY '83 defense appropriations hearings.

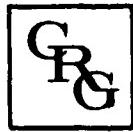
Despite this attitude by the GAO and the Congress, DOD submissions for MYP candidates increased to 16 in number in 1984. On reviewing the 16 candidates, the GAO recommended disapproval of all but one -- the CH-47D helicopter modification -- a candidate that was then denied approval by the Congress. The GAO's opposition to these candidates was based on a lack of credibility in the DOD-claimed cost-savings resulting from multiyear contracting. Except for the CH-47D, none of the MYP candidate submissions contained cost data derived from firm contractor proposals made on both an annual and a multiyear contract basis.

In its review of the FY '84 MYP candidates, the Congress approved six, despite the GAO's disapproval. The House Appropriations Committee stated, however, that:

"The Committee believes that all multiyear candidates, when submitted, must meet the legislative criteria. The Committee will not consider those candidates that fail to meet the criteria."⁵

With respect to the same budget request, the Senate Appropriations Committee made the following comments:

-
4. Chairman of the Subcommittee on Defense, Committee on Appropriations, U.S. House of Representatives. "Department of Defense Appropriations for 1983," Hearings before a subcommittee of the Committee on Appropriations, House of Representatives, 97th Congress, Second session. Tuesday, July 27, 1982.
 5. House Appropriations Committee, Department of Defense's Appropriation Bill, 1984, House Report, Report No. 98-427, (Washington, D.C.: U.S. Government Printing Office), October 20, 1983, p. 106.



"The Committee is of the opinion that multiyear contracting, with the sometimes cumbersome congressional hurdles, is worth the effort. It wishes to encourage the Department and services to use multiyear contracts. However, the low approval rate of the candidates provided to Congress suggests, as the House Appropriations Committee also has noted, that the Department must do better in selecting multiyear programs."⁶

The DOD followed this direction in submitting its FY '85 MYP budget request. Of the 22 MYP candidates submitted to the Secretary of Defense for approval, 10 were denied. Only 12 were submitted to Congress for appropriations. This prior, critical review was effective. Nine of the 12 candidates -- 75 percent -- were funded by the Congress.

This recent history reveals an increasingly critical attitude toward MYP candidate submissions. Now, a MYP candidate will be closely examined at each stage of the approval cycle -- at Air Staff AFSC, OSD, and the Congress -- and its progress can be stopped at any of these points. Thus, careful selection of MYP candidates, from the start, is needed.

B. LEGISLATIVE CRITERIA FOR SELECTION

Section 909 of Public Law 97-86, enacted on December 1, 1981, defined the legislated criteria for approval of a MYP candidate. These criteria must be met, or at least adequately addressed, in a MYP submission if the candidate is to have any reasonable chance of being approved.

-
6. Senate Appropriations Committee, Department of Defense's Appropriation Bill, 1984, Senate Report, Report No. 98-292, (Washington, D.C.: U.S. Government Printing Office), November 1, 1983, p. 76.



1. Criterion #1: Benefit to the Government

In his May 1, 1981 memorandum, Deputy Secretary Carlucci defined this benefit as "...substantial cost avoidance or other benefits when compared to conventional annual contracting methods."⁷ He defined "substantial" in terms of the risks associated with a multiyear contract: those having greater risk should provide greater potential for cost avoidance.

In its enabling Act, the Congress broadened the definition of "benefit to the government". It requires "...that the use of such a contract will promote the national security of the United States and will result in reduced total costs under the contract;...".⁸

Both of these authorities cite the ability to reduce the cost of procurement of defense systems as the major benefit of multiyear contracts. Because of its importance, this subject is discussed separately here, in Section C below.

2. Criterion #2: Stability of Requirement

This criterion is met if the minimum need for the production item to be purchased can be reasonably expected to remain unchanged or to vary only slightly during the contract period, in terms of production rate, procurement rate, and total quantities. Put another way, MYPs are intended to be used for programs whose requirements are so stable that procurement quantities over the period of the contract are unlikely to change.

Changing budget requests are the primary challenge to the credibility of claims of requirement stability. For example, the DOD revised its initial FY '85 budget submission to Congress and, as a result, had to defend its claims of requirement stability for five of that year's MYP candidates: (1) the Tow II missile, which was reduced in quantity procured by 12,000 missiles; (2) the 5-ton truck whose

7. Frank C. Carlucci, op. cit., Enclosure 2, p. 91.

8. P.L. 97-86, Section 909 (b) (2) (A), December 1, 1981.



procurement was reduced by 532 trucks; (3) the turret drive and 25 mm gun for the Bradley Fighting Vehicle, whose procurement was reduced by 55 vehicles; and (4) the F-16, whose FY '86 buy was reduced by 36 aircraft.

The DOD defense for the F-16 and 5-ton truck was that the reductions would not affect the multiyear plan because they were structured in accordance with variation-in-quantity clauses of their contracts. The reduction in the Bradley Fighting Vehicle System was too small to affect the multiyear procurement of its two components. The Tow II, however, required restructuring of its multiyear program. As a result, its MYP status was disapproved by the Congress.

3. Criterion #3: Stability of Funding

This criterion was seen differently by Deputy Secretary Carlucci and Congress. Mr. Carlucci saw this requirement as being a "...reasonable expectation that the program is likely to be funded at the required level throughout the contract period."⁹ That is, it should be reasonably expected that Congress will fund the out-year requirements of multiyear contracts.

Congress sees this differently. Since reductions in out-year funding would be a cause for contract renegotiation or cancellation, Congress is not likely to reduce this previously approved obligation. Thus, Congress requires:

"... that there is a reasonable expectation that throughout the contemplated contract period the Department of Defense will request funding for the contract at the level required to avoid cancellation."¹⁰

In practice, of course, both Congress and DOD must be committed to the MYP candidate. Otherwise, changing budget limits or threat requirements would endanger the candidate's funding stability.

9. Frank C. Carlucci, op., cit.

10. P.L. 97-86, Section 909 (b) (2) (C).



There is a correlation between funding instability and requirement instability. Unless DOD has shown a stable pattern of support for the MYP candidate in the past, there is a distinct probability that the candidate will not be approved. The Tow II missile exemplifies this.

4. Criterion #4: Stability of Design

There is general agreement that this requirement means that the MYP candidate should be one that has completed its research, development, test and evaluation phase (RDT&E) with such success that its design and configuration are established and are not expected to change. The GAO believes that a program should be regarded as stable only after one or two production runs have been completed. This would avoid the problem of design changes required to enhance the ease of production.

The F-16 simulator, proposed as a FY '85 MYP candidate, illustrates the problem of design stability. The GAO stated that the design of the F-16 simulator is not stable because it had experienced four major changes, presumably during its initial production runs. Apparently, though, these changes were not in the simulator's electrical or mechanical configuration -- the major component of the multiyear request. The changes were in avionics, needed to keep the simulator current with the changing roles of the F-16 itself.

Since these changing avionics would not affect the cockpit design of either the F-16 or its simulator, and would be reflected in the simulator mainly as software changes, the proposed multiyear candidate might have been unduly criticized for design instability. (In fact, design instability was only one reason for disapproval of its MYP candidacy. Uncertainty regarding the reasonableness of its cost-savings estimates was a second, important factor.)

This illustrates the fact that the particular system or subsystem for which a multiyear contract is deemed feasible should be specified. In spacecraft, for example, various subsystems (such as sensor systems) might need to be changed. The basic spacecraft design will still be stable, however, and that portion of the total system could be a viable multiyear candidate.



5. Criterion #5: Cost Confidence

Lack of confidence in estimated multiyear contract costs and the extent of cost-savings they can produce has been a major cause for criticism and disapproval of MYP candidate submissions. This criterion states:

"...that the estimates of both the cost of the contract and the anticipated cost avoidance through use of a multiyear contract are realistic."

This is difficult to accomplish, and Section C of this chapter, and much of Chapter III of this handbook are devoted to this topic. The general rule here is that cost and cost savings estimates must (1) be based on inputs from the prime contractor, and (2) be examined critically by the PO. Costs for contracting on both an annual and a multiyear basis must be obtained. This is expensive, so the initial determination of a multiyear contract's feasibility may be made using rough-order-of-magnitude (ROM) estimates.

C. ESTIMATING COSTS AND COST SAVINGS

Once contractor cost estimates have been made -- and in the initial phase, these need only be ROM estimates on both a MYP and annual contract basis -- they must be analyzed by the PO to determine sources of MYP cost-savings. This analysis should start with the annual buy estimate. It should be made by reference to the Work Breakdown Structure (WBS) and the functional areas of production. The functional areas for the F-16 airframe (exclusive of engines and avionics) are as follows:

- Manufacturing
- Engineering
- Tooling
- Quality Control
- Electronics Fabrication
- Subcontracts
- General Materials
(Raw materials, purchased parts, standard hardware, outside products)

11. P.L. 97-86, Section 909 (b) (2) (E).



The analysis should be made on-site at the prime contractor's manufacturing facility by program office cost and price analysts.

When the end-item has already been produced in one or two production runs under annual contracts, relevant production cost data is available. Bid costs should be compared to these historical costs. When directly relevant historical costs are not available, pricing models such as the RCA Price and "H" and "S" models may be used -- but these will provide cost estimates having lesser credibility. Cost-savings estimates made in the initial phase should be documented. The RCA Price Model has been found useful in estimating the price of avionics systems. While parametric estimates (dollars per pound of weight or thrust, for example) were initially used in estimating the B-1B MYP cost-savings, the use of parametric estimates is criticized greatly by those with experience in estimating MYP cost-savings. Pricing by analogy is deemed satisfactory mainly when the analogy is the prior production of the end-item to be procured.

It is not always possible to compete a MYP among prime contractors in order to reduce costs, since the existing one frequently has an overwhelming competitive advantage. Still, the possibility of competition is not lost. Prime contractors should be encouraged to compete their vendors and subcontractors, and should be given the time to do so, in order to lower procurement costs. In dealing with subcontractors it has been found that explanations of the benefits of MYPs are not necessary, and may be confusing. The prime contractor should simply request firm, written bids for the material and parts needed with a number of alternative delivery schedules and quantities. In the F-16 MYP for 1986 to 1989, alternative bids for major cost items were solicited for several different production rates and total production quantities. These alternatives were:

- 600 aircraft delivered at a rate of 150 per year
- 720 aircraft delivered at a rate of 15 per month
- 864 aircraft delivered at a rate of 18 per month

The result of the costing exercise showed that the least unit cost was obtained by procuring 720 aircraft at the rate of 15 per month.

The funding profile of a multiyear contract is front-loaded: expenditures and total obligation authority (TOA) in the first year or two are normally greater than



they would be if annual contracting were used, reflecting initial EOQ purchases and extended advanced buys for inflation avoidance. This is shown in Table 5 where the estimated TOA budget requirements of the Defense System Communications Satellite (DSCS III) are presented on both an annual and a multiyear basis for FY '84 to FY '88. These TOA requirements are illustrated in Figure 1.

The DSCS III example illustrates the problems associated with estimating MYP cost savings. The annual and multiyear budget request estimates submitted to Congress are presented in Table 6.

While the multiyear contract, as a whole, produces a 16.52 percent savings ($=139.8/846.3$) in then-year dollars, TOA requirements for the first two years of the MYP exceed those of annual contracts. The multiyear cost savings are obtained in the future — in the last three years of the contract.

I. The Procedure for Evaluating Cost Savings

a. The "Present Value" Concept

In order to evaluate these future cost savings today, their "present value" must be determined. A future level of expenditure has a smaller present value because of the time value of money: A sum of money on hand today can be invested in interest-bearing securities. Its future value, then, will be its starting amount plus the interest it will earn up to the future date, compounded on a periodic basis. For example, if \$1.00 is invested today in a bond paying 10 percent interest per year, its value one year from today will be \$1.10. If that sum is then reinvested at the same rate, its value two years from today will be \$1.21. Thus, \$1.21 two years from now has a present value (today) of \$1.00. The future value has been "discounted" to a present value using the appropriate interest rate. The equation to determine present value is:

$$PV = FV_t \times (1 + i)^{-t} \quad (1)$$

where PV = present value (today's dollars)
 FV_t = future value in year t (then-year dollars)
 i = discount rate (percent per year)
 t = number of years from today



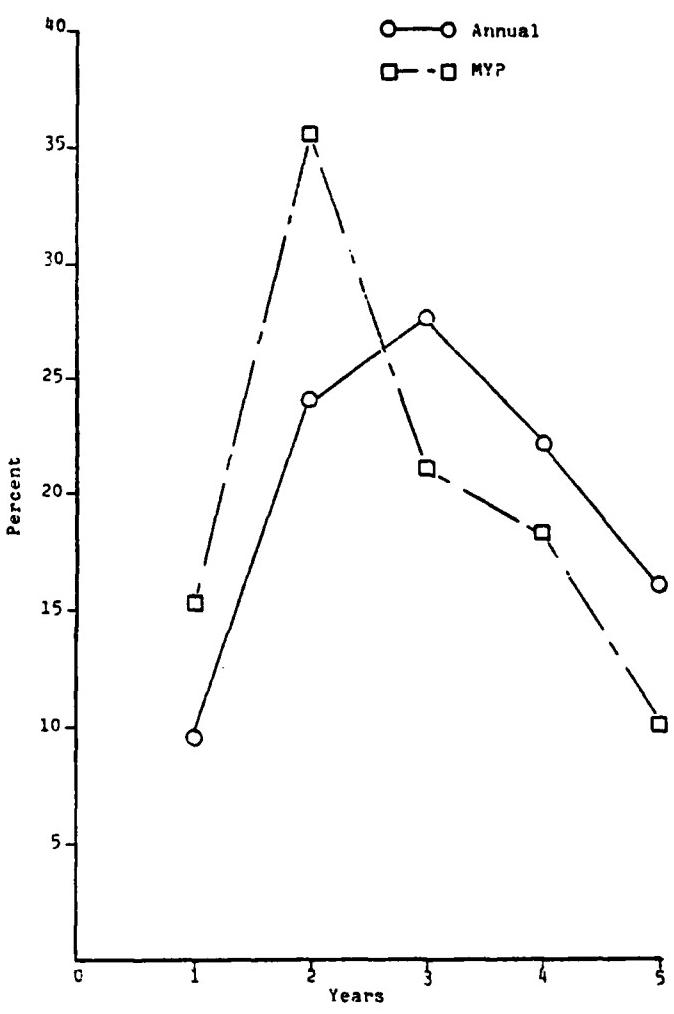
Table 5

**ANNUAL AND MULTIYEAR FUNDING PLANS FOR
GENERAL ELECTRIC COMPANY DSCS III, FISCAL YEAR (FY) 1984 TO 1988**

Quantity	(1)	(2)	FY 1984	FY 1985	FY 1986	FY 1987	FY 1988	TOTAL
			(3)	(4)	(5)	(6)		
Annual Program	0	2	2	2	2	1	1	7
End Item	26.1	233.3	212.8	218.5	155.6	846.3		
Less Advance Funding	--	-27.4	-27.4	-31.8	-16.0	-102.6		
NET REQUEST	26.1	205.9	185.4	186.7	139.6	743.7		
Advance Funding	54.8	--	47.8	--	--	102.6		
(FY 1985)	27.4	--	--	--	--	27.4		
(FY 1986)	27.4	--	--	--	--	27.4		
(FY 1987)	--	--	31.8	--	--	31.8		
(FY 1988)	--	--	16.0	--	--	16.0		
ANNUAL BUDGET REQUEST	80.9	205.9	233.2	186.7	139.6	864.3		
(Estimated)								
Multiyear Program								
End Item	--	208.1	174.4	169.1	84.7	636.3		
Less Advance Funding	--	-23.2	-52.2	-51.9	-25.9	-153.2		
NET REQUEST	--	184.9	122.2	117.2	58.8	483.1		
Advance Funding	81.6	52.4	13.7	5.5	--	153.2		
(FY 1985)	23.2	--	--	--	--	23.2		
(FY 1986)	23.2	29.0	--	--	--	52.2		
(FY 1987)	23.2	17.1	11.6	--	--	51.9		
(FY 1988)	12.0	6.3	2.1	5.5	--	25.9		
Non-MYP Requirements	26.1	13.9	13.3	6.5	10.4	70.2		
MULTIYEAR BUDGET REQUEST	107.7	251.2	149.2	129.2	69.2	706.5		

Source: Material provided by Captain Gary Rusnak, Department of the Air Force, Headquarters Space Division (AFSC), Los Angeles, California.





COMMONWEALTH RESEARCH GROUP, INC.
BOSTON, MASSACHUSETTS

Figure 1
DSCS III
PERCENT FUNDING/TOTAL FUNDING

Prepared By:	Date:	Approved By:	Date:	
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Table 6

DSCS III MYP COST SAVINGS IN THEN-YEAR DOLLARS

<u>Fiscal Year</u>	<u>Budget Request Estimates</u>		
	<u>Annual Contracts</u>	<u>Multiyear Contract</u>	<u>MYP Cost Savings</u>
----- <u>(Millions of then-year dollars)</u> -----			
	(1)	(2)	(3)=(1)-(2)
1984	80.9	107.7	-26.8
1985	205.9	251.2	-45.3
1986	233.2	149.2	+84.0
1987	186.7	129.2	+57.5
1988	<u>139.6</u>	<u>69.2</u>	<u>+70.4</u>
Total	<u>846.3</u>	<u>706.5</u>	<u>+139.8</u>

Source: Material provided by Captain Gary Rusnak, Department of the Air Force, Headquarters Space Division (AFSC), Los Angeles, California.



If we use the DSCS III example and assume a 10 percent interest (discount) rate, then the present value of the DSCS III MYP cost savings, using then-year dollars, is:

Table 7

**PRESENT VALUE OF DSCS III MYP COST SAVINGS,
10 PERCENT DISCOUNT RATE**

<u>Fiscal Year</u>	<u>Savings</u>	<u>1984 Present Value</u>		<u>Sum of Present Values</u>
		(millions of dollars)		
-(then-year \$)-				
	(1)	(2)		(3)
1984	-26.80	-26.80		-26.80
1985	-45.30	-41.18		-67.98
1986	+84.00	+69.42		+1.44
1987	+57.50	+43.20		+44.64
1988	+70.40	+48.08		+92.72
Total	<u>139.80</u>	<u>+92.72</u>		<u>--</u>

Thus, the 1984 present value of the DSCS III MYP cost savings is \$92.72 million. Note that the percent savings of MYP vs. annual contracts, in present value, remains the same as in then-year dollars, since the present value of the annual contracts would be calculated using the same mathematical technique (Equation 1).

b. DOD Procedure

Cost-savings estimates for MYPs must be put in terms of their present value. Determination of this present value causes controversy, however, since DOD, contractors, and the GAO all use different discount rates and treat inflation



differently. The DOD follows the rules established by OMB in its OMB Circular A-94. As described in DOD Instruction 7041.3, these rules prescribe the use of a 10 percent discount rate on deflated dollars. That is, future TOA should be discounted for inflation so that future cost savings should be expressed in terms of today's dollars.

The inflation rate for 1984, as measured by the rate of increase in the Consumer Price Index, was approximately five percent. The indications are that this rate will be a typical one throughout the 1985 -- 1990 time period. Taking this rate and applying it to then-year dollars (using Equation 1 with the inflation rate in place of the discount rate) is the procedure for obtaining deflated cost savings values. These may then be discounted to their present value in the normal manner. Applying this procedure to DSCS III gives the following results:

Table 8

**PRESENT VALUE OF DSCS III MYP DEFLATED COST SAVINGS,
10 PERCENT DISCOUNT RATE¹**

<u>Fiscal Year</u>	<u>Savings</u>		<u>1984 Present Value of Deflated Annual Savings</u>	<u>Sum of Present Values</u>
	<u>Then-Year</u>	<u>Deflated</u>		
(millions of dollars)				
	(1984 dollars)			
	(1)	(2)	(3)	(4)
1984	-26.80	-26.80	-26.80	-26.80
1985	-45.30	-43.14	-39.22	-66.02
1986	+84.00	+76.19	+62.97	- 3.05
1987	+57.50	+49.67	+37.32	+34.27
1988	+70.40	+57.92	+39.56	73.83
Total	<u>139.80</u>	<u>113.84</u>	<u>+73.83</u>	<u>--</u>

Note: 1. Then-year dollar amounts of future cost savings were deflated to 1984 values assuming a constant 5 percent per year inflation rate. Present values of these deflated future savings amounts were determined using a discount rate of 10 percent per year.



c. GAO Procedure

The GAO uses a discount rate, applied to cost-savings in then-year dollars, that is equal to the interest rate paid by the government on treasury securities of appropriate maturity. Thus, the interest rate currently paid by a 3-year Treasury note would be used as the discount rate to bring back the third year's MYP cost-savings to a present value. At the time of this writing, 3- to 5-year Treasury notes are paying an interest rate of approximately 10 percent, so the first example, given in Table 7 above, presents the cost-savings estimates that would be arrived at now by the GAO. Under these assumptions, their present value would be higher than those estimated by DOD.

2. Determining the Internal Rate of Return (IRR)

The "internal rate of return" (IRR) is an alternative means of valuing cost savings. It is defined as that rate of interest which, when used to discount a future stream of income to its present value, will yield a present value exactly equal to the investment that created the income stream. The greater initial year TOA requirement of MYPs is the investment that produces the out-year cost savings. The IRR, then, is the effective rate of interest that the initial investment earns in producing those later cost savings.

Here, the investment is the additional cost for the MYP in the first year or two, and the future income is the out-year cost-savings in then-year dollars. For the yearly TOA cost-savings in Table 6 (both negative and positive) for DSCS III, the internal rate of return is found to be 63.39 percent. A similar calculation made for other cost-savings estimates submitted to Congress in February, 1984 shows the following:



Table 9

Internal Rates of Return for Several FY '85 MYP Candidates

<u>MYP Candidate</u>	<u>Internal Rate-of-Return (Percent)</u>
	(1)
DSCS - III	63.39
F-16 Airframe	28.57
UH/EH-60A Airframe	282.73
CH/MH-5E Airframe	53.65

Calculation of the internal rate-of-return can be made using the HQ USAF/ACM computer model -- or any of several financial calculators available on the market.

A calculation of the internal-rate-of-return of TOA cost-savings is not required if the cancellation ceiling will be unfunded.¹² In such cases it is best to avoid including the calculation. There is a temptation to rank a given year's MYP candidates, and their internal rate-of-return is an easy measure to use to do so. Since it has little to do with DOD priorities, its use to establish priorities could be unfortunate. In general, the criterion for an acceptable MYP candidate should simply be that its internal rate of return shall be positive and greater than zero.

12. Bernard L. Weiss, op. cit.



D. OTHER CRITERIA

Two additional criteria will affect the final approval of a MYP candidate, and should be considered in making its initial selection. These include budget availability for the candidate's initial and out-year TOA requirements, and political support for its candidacy.

1. Budget Availability

A MYP candidate in a given fiscal year must compete for limited funds. It must compete with other current-year candidates, and with the on-going funding requirements of prior year multiyear contracts. Thus, at times, structuring an acceptable level of the initial years' TOA may be desired. If the amount of this initial TOA is high, the program office might want to strike a balance between upfront EOQ effort and savings achieved.

2. Political Support

Political support for a MYP candidate can be an overriding factor in determining its approval. The B-1B multiyear procurement is an outstanding example of this fact. Initially cancelled by President Carter in 1977, the decision to procure B-1 bombers in quantity was one of the first made by President Reagan when he assumed office in 1981. This high-level support, coupled with the desire for 100 operational aircraft by the end of 1986, made this costly program a possible MYP candidate. Despite the lack of historical production cost data (cost-savings estimates were made parametrically), the B-1B MYP candidacy was approved by the Congress as part of the FY '84 budget.

Political favor or opposition to a MYP candidate is not limited to the Presidency or the Congress. A MYP submission must be approved by HQ AFSC, by the Secretary of the Air Force, by the Secretary of Defense, and then by the Appropriations and Authorization Committees of both the U.S. House of Representatives and the U.S. Senate. Favorable consideration at each of these levels is needed if the MYP candidate is to gain final approval for a multiyear contract award.

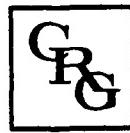


E. SUMMARY

A competent MYP submission involves the expenditure of a sizable effort by the prime contractor, its vendors and subcontractors, and the Air Force program office. It is a costly undertaking. Therefore, selection of MYP candidates is a very important first step in this process.

To stand a chance of receiving ultimate approval, a MYP candidate must meet the legislative criteria, based on those set down on May 1, 1981 by Deputy Secretary Frank C. Carlucci. The program must be stable in its design, requirement and funding; and it must provide credible cost-savings benefits to the government, preferably based on historical production cost data and firm contractor bids on both an annual and multiyear basis.

Having met those criteria, the practical considerations of budget availability and political support must be taken into consideration. If necessary and possible, the TOA profile should be modified to reduce the effect of MYP cost front-loading in initial years. Support for the candidate must be present at all levels. A thorough and competent MYP submission can do much to earn this support. Chapter III describes the process whereby such a submission can be generated.



III

PROCESSING A MAJOR MYP SUBMISSION

A. INTRODUCTION

This chapter describes the process for submitting a major MYP candidate for approval. In its committee hearings regarding the FY '84 budget, Congress set out general guidelines for submitting such requests. These included the following:

1. "...two track submission of multiyear proposals is needed. The first shall be in the budget submission. The second shall be at the time of contract award and reflect the actual contract details." ¹³
2. "...no multiyear contract shall be awarded if the savings are less than in the budget justification material submitted to Congress." ¹⁴
3. "...all multiyear proposals are to be submitted in concert with the official budget submission." ¹⁵
4. "...all multiyear requests (should) be prioritized; that budget justification material provide a more detailed account of the specific actions that will be taken to enhance the industrial

13. U.S. Congress, Appropriations Conference Report, 1984 Budget, p. 58, as enclosed with a memorandum from Vincent Puritano, Assistant Secretary of Defense (Comptroller), Washington, D.C. 20301. February 6, 1984.

14. Ibid.

15. Ibid. Note that this disagrees with instructions from HQ USAF/RDC which states, in part: "If a candidate is not included in the annual DOD Budget submission, it may be submitted to Congress separately." (Bernard L. Weiss, Brigadier General, USAF, Director, Contracting and Manufacturing Policy, "Policy Letter 84-II-Multiyear Contracting Guidance," Headquarters, United States Air Force - RDC, Washington, D.C., Attachment 4, p.2, May 18, 1984.



base if a multiyear procurement is approved; and that all multiyear candidates meet the established legislative criteria."¹⁶

Thus, processing a MYP candidate's submission involves both its adequate preparation, and its submission in accordance with prescribed time schedules.

The time needed to obtain needed approvals depends on whether the MYP candidate involves a small, intermediate, or large contract, as defined by the Air Staff. In all cases, however, ample time should be allowed for the preparation of cost estimates, contractor proposals, and preparation of exhibits. These must be prepared in time for the first submission to be made in conjunction with the POM input for the program. The first DSCS III package was submitted to Headquarters, Air Force Systems Command (HQ AFSC) in July, 1982 -- only six months prior to the budget submission to Congress for FY '84. As a result, the DSCS III proposal for multiyear funding was not submitted with the fiscal year 1984 budget. Congress was simply notified of its potential savings during budget hearings. Congress gave permission to the Secretary of Defense to submit a late MYP package for DSCS III for FY '84 but noted, as described above, that this was "...not to be interpreted as a precedent...".¹⁷

I. MYPs and the Budget Process

The President's budget request, submitted to Congress in January of each year, is the outcome of the Planning, Programming, and Budgeting System (PPBS) process. This process starts early in the preceding year with analyses and guidance for defense, resulting in the publication of the Air Force Program Objective Memorandum (POM) in May of that year (i.e. the May preceding the January in which the PB goes to Congress). The POM from each service is reviewed by OSD under the direction and supervision of the Defense Resources Board (DRB). The DRB resolves major issues between the services, and makes recommendations to the Secretary

16. op. cit., p. 54.

17. Appropriations Conference, op. cit., p. 54.



of Defense. These recommendations result in a defense Program Decision Memorandum (PDM), published in August, and a Budget Estimate Submission (BES), published in September in response to PDM.

Between October and December, Program Budget Decisions (PBDs) are made, incorporating the final resolution of major issues. These result in the Defense budget, submitted by the President to Congress in January, for the fiscal year to start on the following October. This process is illustrated in Figure 2.

In order to ensure that DOD approved MYP requests are included in the budget, the MYP submission should be initiated 18 months before. For example, the submission for FY '87 funding of a MYP candidate should start in June 1984. In September, the buying activity should provide with its POM submission to AFSC the initial MYP package. This package should contain rough-order-of-magnitude (ROM) estimates of costs and cost-savings in the form of exhibits 1, 4 and 8. For those candidates approved by AFSC, these exhibits will accompany the AFSC POM submission to HQ USAF in December. If included in the USAF POM submitted to OSD in May, the MYP candidate warrants more elaborate justification so a complete set of exhibits can be submitted by HQ USAF to OSD to support the Budget Estimate Submission (BES) in September. These exhibits should be complete by August 1. This process is illustrated in Figures 3 and 4.

2. Categories of Multiyear Contracts

Statutory authority for multiyear procurements is provided in 10 USC 2306 (h) (Section 909) of the Department of Defense Authorization Act, Fiscal Year 1982 (P.L. 97-86). This law has several provisions:

1. Multiyear procurements may be used for major systems acquisitions.
2. Advance procurements may be made to obtain economic lot prices.
3. Cancellation ceilings may include recurring (as well as non-recurring) costs.
4. Congress must be notified when DOD plans to sign a MYP contract whose cancellation ceiling exceeds \$100-million.



Figure 2



Source: Defense Satellite Communications System Program, DSCS III, HYP Candidate Approval Plan.
Information provided by Captain Gary Russnak, Department of the Air Force, Headquarters, Space Division AFSC, Los Angeles, CA.

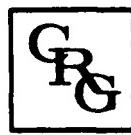
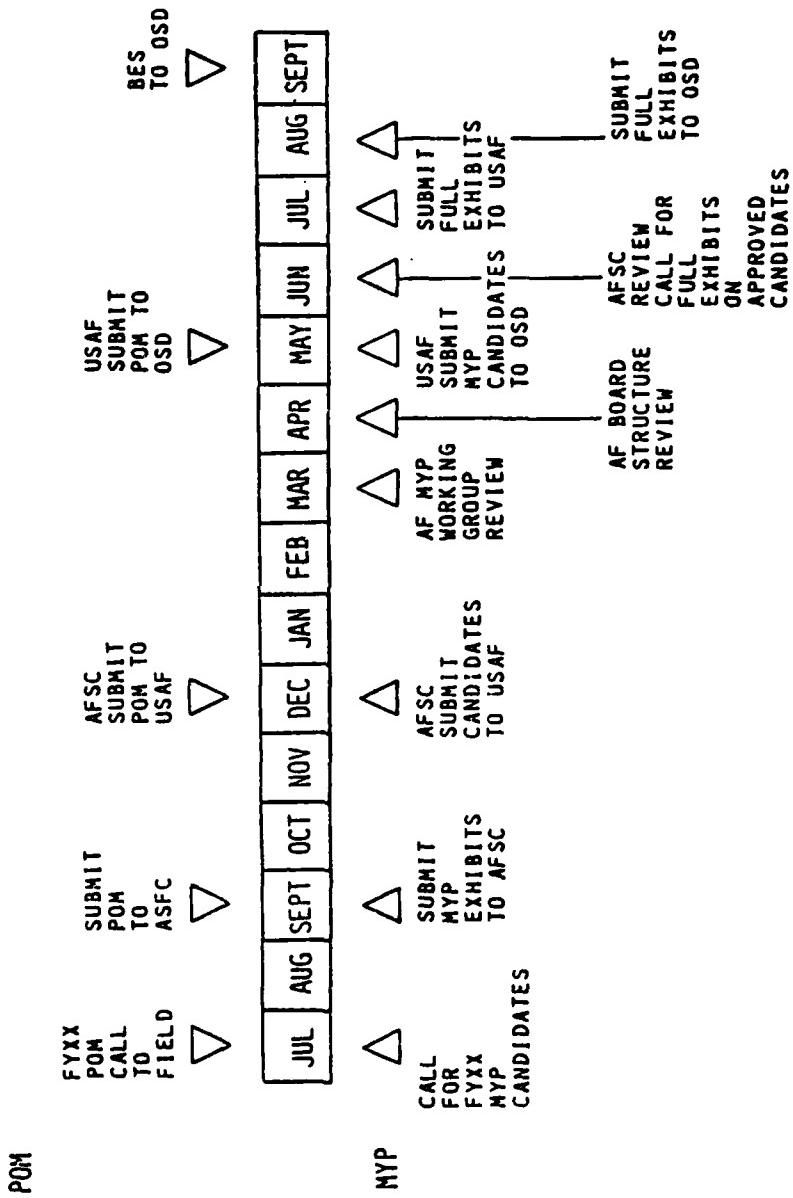


Figure 3



Defense Satellite Communications System Program, DSCS III, MYP Candidate Approval Plan.
Information provided by Captain Gary Rusnak, Department of the Air Force, Headquarters,
Air Force Space Division AFSC, Los Angeles, CA.

Source:

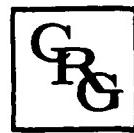
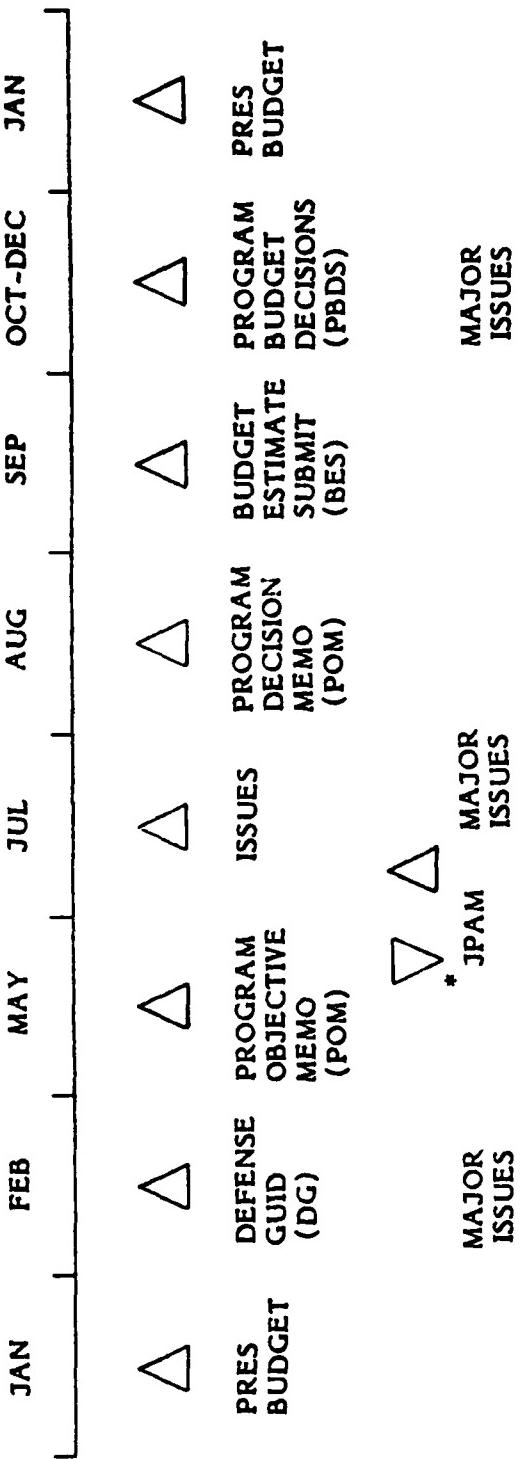


Figure 4

PPBS AND THE PRESIDENT'S BUDGET
FROM THE AIR FORCE PERSPECTIVE



*JPAM - JOINT PROGRAM ASSESSMENT MEMO

Source: "Financial Overview Briefing Presented to Surveys and Investigators (S&I) Staff", presented by Col. G.B. Stephenson, DCS/Controller, Headquarters, Air Force Systems Command, October 22, 1984.

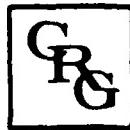


The Department of Defense Appropriations Bill of 1982 established the following requirements for MYPs:¹⁸

1. Expanded advance buys for MYPs shall be funded to the level of their termination liabilities.
2. An initial year's TOA will be required to cover the costs of these advance buys for MYPs.
3. The House of Representatives Appropriations Committee (HAC) will require substantial supporting documentation to justify multiyear contracting for major systems, to support claims regarding:
 - a. benefits derived from the MYP -- especially as they affect vendors, small suppliers, and subcontractors;
 - b. stability of requirements and funding profile;
 - c. degree of cost confidence; and
 - d. degree of design stability.

The Department of Defense Appropriation Bill for Fiscal Year 1984 made some changes to these conditions. Primary among these was the requirement that Congress be notified prior to the award of a MYP contract containing an EOQ advance procurement of \$20 million or more, or an unfunded cancellation ceiling of the same amount. From these conditions, and other legislative requirements, have come the categorization of multiyear contracts into three categories: small, intermediate, and large. These categories are important in the final phase of a MYP submission -- the contract award.

18. House Appropriations Committee, Department of Defense's Appropriations Bill, 1982, House Report, Report No. 97-333, (Washington, D.C.:U.S. Government Printing Office), November 16, 1981.



a. Small Multiyear Contracts

"Small" MYPs are defined as those whose RDT&E costs are equal to or less than \$200 million; whose total procurement costs are equal to or less than \$1 billion; whose EOQ advance buys are equal to or less than \$20 million, as are their unfunded cancellation ceilings. The advantage to this category of MYPs is that the contract may be awarded without prior Congressional notification. Congress is notified in the next quarterly report after the award of the contract. Approval for the award of the contract may be made by the head of the contracting activity (HCA), and this may be delegated — but under some conditions approval of the Manual Approval Authority may be required.

b. Intermediate Multiyear Contracts

When either the EOQ advanced buy or the unfunded cancellation ceiling exceed \$20 million, the MYP contract becomes defined as "intermediate" by the Air Staff. Congress must be notified of an intermediate MYP contract 30 days in advance of its award, so that the Senate and House of Representatives' Appropriations Committees may review and approve it.

c. Major System Multiyear Contract

When RDT&E costs exceed \$200 million or production costs become greater than \$1 billion the MYP is regarded as a major system acquisition. Their final approval will await the decision of the Congress regarding the entire budget submission — a delay which can last several months. Approval levels for various findings of fact, and required notification of Congress, are described in Table 10.

B. THE MYP SUBMISSION PROCEDURE

A MYP submission goes through three phases before a multiyear contract is awarded: (1) the initiation phase; (2) the approval phase; and (3) the execution phase. These are described below, along with the appropriate PO activity in each.



Table 10

APPROVAL AND CONGRESSIONAL NOTIFICATION
REQUIREMENTS BY MULTIYEAR CATEGORY

<u>Approval Level For:</u>	<u>Small</u> <u>(1)</u>	<u>Intermediate</u> <u>(2)</u>	<u>Large</u> <u>(3)</u>
<u>Initial Findings:</u>	HCA	AF/RDC	SAF/AL
<u>Validation Findings:</u>			
$S_V \geq S_I$	MAA	MAA	MAA
$S_V < S_I$	HCA	AF/RDC	SAF/AL
$P_V < 0$	HCA	AF/RDC	SAF/AL
<u>Price Check Findings¹:</u>			
$MYNeg. \leq MYProp.$	CO	CO	CO
$MYNeg. > MyProp.$	MAA	MAA	MAA

Abbreviations:

CO	- Contracting Officer
HCA	- Head of Contracting Activity (or its delegate)
MAA	- DOD Budget Guidance Manual Approval Authority
MYProp.	- Multiyear price as initially proposed.
MYNeg.	- Multiyear price as finally negotiated.
P _V	- Present value of cost savings
S _V	- Validated MYP savings
S _I	- Initial MYP savings estimate

Note: 1. Price check findings are required if the MYP is initiated on an unpriced basis.

Source: Bernard L. Weiss, op. cit., Attachment I



I. The Initiation Phase

a. Initial Air Force Planning

The effort in this phase is concerned with the determination of the feasibility of procuring desired end items on a multiyear contract basis. Possible feasibility of a MYP in terms of cost savings and other legislative criteria is determined by the Program Manager and PCO. In this determination they should consider various procurement alternatives -- including the existing, "directed" procurement schedule; possible MYP alternatives; and annual contracting alternatives. The process must start early enough to meet the budget and approval schedule requirements already described.

b. Initial Contractor Contact

The initial MYP package must include rough-order-of-magnitude cost estimates based on inputs from the contractor. In order to have these ready on time, the program office must contact the contractor as soon as possible. This early contact with the prime contractor has been typical of many successful MYP candidacies. It was a key part of the MYP process for the F-16 airframe, among others. Experienced PO personnel regard it as a mandatory first step.

It may be necessary to educate the prime contractor regarding the nature of a MYP and the benefits it can offer to the contractor, its subcontractors and vendors, and to the government. General Electric, the prime contractor on the DSCS III program, was at first reluctant to undertake a MYP. The reduction in future business risk due to the funding stability inherent in MYPs became a convincing argument.

c. Areas of Cost Savings

With a baseline for annual contract costs, MYP savings can be determined. There are several ways in which MYP cost-savings can be achieved:



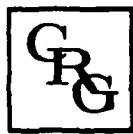
- EOQ buys
- Economies of scale in production
- Scheduling economies for subcontractors

The first, "EOQ buys", permits the prime contractor to take advantage of volume discounts. In fact, "EOQ" is that order quantity which minimizes production-plus-inventory maintenance costs. Factors such as shelf-life, technological obsolescence, and the possibility of a design change must also be considered. The following are some examples of EOQ buys:

- HRB Singer, the prime contractor on the F-16 simulator, noted that 30 percent of its cost is in purchased materials. It found that its materials cost depended on the size of its order and estimated it could save 15 percent of these costs by buying material for 20 simulators in a MYP, rather than for four or five in annual contracts.
- General Dynamics, the prime contractor on the F-16 airframe, purchases 50 percent of its total cost from other firms. It found substantial savings when it solicited competitive bids. It found more savings by deciding to purchase 40 percent of its total material quantity at the start, thus permitting it to buy directly from the mills rather than from warehouse distributors. Subcontractors were also permitted to buy material all at once, up to their total contract quantity, and store it until needed for manufacture.
- General Electric, in its B-1B MYP, purchased all of its rare earth materials on award of its contract. In so doing it took advantage of a temporarily depressed price of nickel, and purchased tungsten and titanium for future delivery at current prices.

Production scale economies are found in the reduction of setup time for the production run, and the economic feasibility of automation. The cost of capital equipment can be amortized over a larger quantity of production, without risk, so that the cost savings from more efficient, automated procedures may be obtained.

Scheduling efficiencies are found at the subcontractor level where the components for the MYP end-item are only one product of the firm. With a



multiyear contract in hand, the subcontractor frequently can schedule its production for slack periods during which its labor and equipment would otherwise not be used. The resulting total cost to the manufacturer is only its direct costs. Under competition, most of these savings can be obtained by the prime contractor and, therefore, the government. The prime contractor itself will also achieve scheduling efficiencies, sometimes on a large scale as it ensures the stable continuity of its future business.

2. The Approval Phase

Obtaining approvals for a MYP candidate can take 12 months before its submission to Congress. During this time the initial MYP package must be reviewed and approved by HQ AFSC, and included in the POM submission to HQ USAF. This preparation of these estimates can take several months, and time must be allotted for it. The estimate should include estimates of both annual and MYP costs.

Approval authority for Initial Multiyear Findings was shown in Table 10. Their approval for a "small" MYP can be granted by the head of the contracting agency; for an "intermediate" MYP by USAF/RDC; and for a major system MYP, by the Assistant Secretary of the Air Force (SAF/AL). This approval provides authority to solicit proposals on both multiyear and an annual contract basis.

After approval of Initial Findings, the dual proposal cost data should be analyzed by the contracting officer to ensure their validity. Should-cost and fact-finding exercises are carried out as needed. A set of Validation Findings are then prepared, prior to the initiation of the multiyear contract effort, in a format similar to that of the Initial Findings. If any changes are made to the proposal data in preparing the validation exhibits, the contracting officer should maintain a relevant audit trail. To verify that the MYP still results in cost savings, a present value analysis of the MYP and annual contract constant dollar outlays should be made using a 10 percent discount rate. The difference in the sums of these present values should be positive.

Approval by OSD will depend on the extent to which the candidate meets the legislative criteria for granting multiyear contracts; the credibility of its estimated cost-savings; and the degree of competition for the MYP funds that will be deemed to be available.



If OSD approves the MYP candidate, it will then be included in the DOD budget submission to Congress as part of the President's annual budget. At this time it probably will undergo a review by the GAO to determine the extent to which it meets the legislative MYP criteria, and to evaluate the extent and credibility of the MYP cost-savings estimates. The GAO may question the degree to which the MYP candidate meets the legislative criteria. Disapproval by GAO, however, does not mean automatic disapproval by Congress. Congressional hearings by both the House and Senate may provide an opportunity to present facts in support of the MYP request. Once Congressional approval is received and appropriations have been made for the MYP's initial-year TOA, the contracting officer can proceed to satisfy other usual (non-MYP) requirements and award a contract.

3. The Execution Phase

The contractor should be given adequate time to prepare the proposals. It is also helpful if the program manager office solicits contractor top management support to ensure that the contractor's project office will have adequate support. The RFP should cover the program approach whose details were earlier agreed upon.

While the contractor is preparing the proposal, the PO should prepare for its receipt and review. It should formulate a review plan; educate staff regarding the technical evaluation; and build a historical cost data base.

Once the contract has been negotiated, the Congress must receive a revised MYP submission based on actual contract details. If the contract award justification package shows savings at least as great as those in the budget justification package, Congress must receive this package not earlier than 30 days before, nor later than 30 days after contract award. If the savings are less than those in the initial multiyear findings exhibit package, approval of the appropriate Congressional Committees must be obtained before the contract is let. Prior Congressional review does not apply to small MYPs.



C. PREPARING THE MYP EXHIBITS

Nine exhibits must be included in the MYP submission package. They serve to justify the use of a MYP and to document facts in a standard format. Their use is described in DOD Manual 7110-1-M. They include the following:

1. Multiyear Procurement Criteria
2. Acquisition Strategy Comparative Summary
3. Total Program Funding Plan
4. Contract Funding Plan
5. Impact of Inflation on Funding
6. Savings and Cost Avoidance
7. Impact of the Multiyear Program on the Defense Industrial Base
8. Present Value Analysis
9. Internal Rate of Return

Two examples of successful MYP submissions -- for the F-16 and the DSCS III -- are presented in Appendix B. Considerations to be used in completing these exhibits are discussed here.

I. Multiyear Procurement Criteria

Ultimate approval of a MYP candidate will depend largely on the extent to which the MYP submission shows that the legislative criteria are met. These include (1) benefit to the government, in the form of cost avoidance or other benefit; stability of (2) requirement, (3) funding, and (4) design; and (5) confidence in estimated costs and MYP cost-savings. The benefits of criterion (1) should suffice to offset the risks associated with the remaining criteria.



2. Comparative Summary

A separate summary should be included for each multiyear contract included in the budget line item. Total contract price, cancellation ceiling, and MYP cost savings should be presented in then-year dollars. The risk associated with the MYP criteria is derived from the first exhibit.

3. Total Program Funding Plan

This exhibit presents the data contained in exhibit 4, plus other program funds not related to MYP contracts.

4. Contract Funding Plan

This exhibit compares annual and multiyear alternatives on a FY funding basis. It presents the TOA requirements and estimated outlays, by year, for both annual and multiyear contracts, presented in then-year dollars. Its purpose is to illustrate the effects of the different levels of advance procurements in the two contracts on a year-by-year basis. The total TOA difference between the two should agree with that shown in Exhibit 2.

5. Inflation Impact

Since MYP contracts frequently contain an economic adjustment clause, this exhibit presents a sensitivity analysis for TOA requirements as a function of different inflation rates.

6. Savings and Cost Avoidance

Year-by-year MYP cost savings, in then-year dollars, are presented in this exhibit. Total savings, by source, are also presented, with a one-paragraph explanation of why it occurs. Savings due to inflation-avoidance should be explained explicitly.



7. Impact on the Industrial Base

Congress is concerned about the impact of MYPs on the defense industrial base. The benefits originally promised for MYPs included enhanced competition and capital investment, stability of employment, and increased vendor competence and efficiency. Quantitative data supporting these claims should be presented whenever possible.

8. Present Value Analysis

This exhibit presents yearly outlays on a year-by-year basis, in then-year dollars; in constant, budget-year dollars; and in present value. Base-year dollars are determined by discounting then-year dollars by the expected inflation rate. This varies on a year-to-year basis. DOD projections of future inflation rates at the time of preparation of this exhibit should be used. To obtain the present values of future constant-dollar outlays, a 10 percent discount rate should be used in accordance with DOD Instruction 7041.3.

9. Internal Rate of Return

This exhibit presents the calculated internal rate of return on the year-by-year MYP savings in outlays and TOA. It is determined for outlay differences expressed in both then-year and constant dollars.

Additional information regarding the completion of these forms is presented on pages 241-41 through 241-48 of the DOD Budget Guidance Manual.

D. SUMMARY

This chapter has described a general procedure for processing MYP submissions. The procedure's three phases are designed to develop a successful MYP candidate with minimal risk of failure. The outcome of the process should be the documentation needed for approval, based on factual cost and other data, presented in a standard format for ready review by approving authorities.



IV

SUMMARY

Multiyear procurements can be a source of significant cost savings in the acquisition of defense systems and sub-systems. They also offer other potential benefits to the government in the form of enhanced competition (at least at the subcontractor level) and increased capital investment with resulting increases in productivity. There are risks associated with MYPs as well, however.

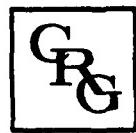
Consequently, approval authorities are ambivalent about MYPs -- wanting to obtain their advantages on the one hand; anxious to avoid their risks and shortcomings on the other hand. As a result, a set of requirements for the successful submission of MYP requests has developed. Some of these are legislated requirements; others have to do with proper program management. In each case, the Air Force program office -- the PO -- plays the key role in seeing that these requirements are met, and that the projected benefits of a MYP candidate are actually achieved. This Handbook provides a guide to help accomplish this.

Several important guidelines were revealed during the research that was carried out in preparing this Handbook. These are as follows:

- the legislative criteria, defining the benefits to the government and the risks of the program, must be clearly addressed.
- Cost-savings estimates should be based on contractor inputs, critically analyzed in detail by the PO.
- Early contractor contact and continual communications and agreement on the details of the procurement quantity profile are needed to obtain firm proposals from the contractor, on both annual and multiyear contract bases, that will be relevant to the program plan.



In the end, the MYP candidate must offer benefits that will be sufficient to offset its risks. This fact must be well documented and credible to approving authorities. The preceding chapters of this Handbook give some guidelines as to how this can be accomplished.



APPENDICES

COMMONWEALTH RESEARCH GROUP, INC.
BOSTON, MASSACHUSETTS



APPENDIX A

OUTCOMES OF MULTIYEAR SUBMISSIONS FOR FISCAL YEARS (FY) 1982 TO 1985

COMMONWEALTH RESEARCH GROUP, INC.
BOSTON, MASSACHUSETTS



Table A.1

**CONGRESSIONAL ACTION ON THE DEPARTMENT OF DEFENSE'S
MULTIYEAR PROCUREMENT CANDIDATES, FISCAL YEAR 1982**

System/Subsystem	Government Accounting Office (GAO) Opinion		Congressional Action On MYP Authority	
	Unsatisfied Requirements (1)	MYP Status (2)	Authorization (3)	Appropriation (4)
Air Force:				
F-16 Aircraft	N.A.	N.A.	N.A.	Approved
Navstar Global Positioning System (GPS)	N.A.	N.A.	N.A.	Approved
TRC-170 Radio	N.A.	N.A.	N.A.	Approved
Army:				
ALQ-136 Radar Jammer	N.A.	N.A.	Conditional Approval	Approved
M-1 Fire Control System	N.A.	N.A.	N.A.	Approved
UH-60 Blackhawk Helicopter (Airframe)	N.A.	N.A.	N.A.	Approved
Navy:				
C-2A Aircraft	N.A.	N.A.	Conditional Approval	Approved
Standard MR SM-1 (Rocket Motor)	N.A.	N.A.	N.A.	Approved

Abbreviation: N.A. = Not Available

Note: 1. The Department of Defense may not enter into a multiyear procurement contract until (1) OSD submits a written report to the House and Senate Authorization committees justifying a multiyear procurement strategy; and (2) a period of 30 days has elapsed from the time in which the report is received by the committees.

Sources: Column (3) House of Representatives, Department of Defense Authorization Act, 1983, Conference Report, Report No. 97-749, (Washington, D.C.: Government Printing Office), August 16, 1982, pp. 4.

Column (4) Department of Defense Appropriations for 1984, Part 5, information submitted to a subcommittee of the Committee on Appropriations, House of Representatives, 98th Congress, First Session, June 9, 1983, pp. 764-765.



Table A.2

CONGRESSIONAL ACTION ON THE DEPARTMENT OF DEFENSE'S
MULTIYEAR PROCUREMENT CANDIDATES, FISCAL YEAR 1983

System/Subsystem	Government Accounting Office (GAO) Opinion		Congressional Action On MYP Authority	
	Unsatisfied Requirements (1)	MYP Status (2)	Authorization (3)	Appropriation (4)
Air Force: Defense Meteorological Satellite Program (DMSP)	Cost Confidence	N.A.	N.A.	Approved
KC-10 Aircraft	N.A.	N.A.	N.A.	Approved
Army: Multiple Launch Rocket System	Cost Confidence	N.A.	Conditional ¹ Approval	Approved
UH-60 A Blackhawk Engines	N.A.	N.A.	N.A.	Approved
Navy: A-6E	Cost Confidence	N.A.	Conditional ¹ Approval	Denied
CH-53E Helicopter	Cost Confidence	N.A.	Conditional ¹ Approval	Denied
EA-6B Aircraft	Cost Confidence	N.A.	Conditional ¹ Approval	Denied
Fleet Oiler (TAO)	Cost Confidence	N.A.	N.A.	Denied
MK-46 Torpedo	Cost Confidence Req. Stability	N.A.	N.A.	Approved
Modular Universal Laser Equipment (MULE)	Cost Confidence	N.A.	Conditional ¹ Approval	Denied
NATO Seasparrow	Cost Confidence	N.A.	N.A.	Approved
Standard SM-1 Missile (Control and Guidance)	Cost Confidence	N.A.	N.A.	Denied

Abbreviation: N.A. - Not Available

Note: 1. The Department of Defense may not enter into a multiyear procurement contract until (1) OSD submits a written report to the House and Senate Authorization Committees justifying a multiyear procurement strategy; and (2) a period of 30 days has elapsed from the time in which the report is received by the committees.

Sources: Column (1) Government Accounting Office, GAO Analysis of Projects Proposed by the Department of Defense for Multiyear Contracting in Its Fiscal Year 1983 Budget Request (PLRD 82-72), (Washington, D.C.: U.S. Government Printing Office), April 29, 1982, pp.4-6.
 Column (3) House of Representatives, Department of Defense Authorization Act, 1983, Conference Report, Report No. 97-749, (Washington, D.C.: U.S. Government Printing Office), August 16, 1982, p.4.
 Column (4) Department of Defense Appropriations for 1984 part 5, information submitted to a subcommittee of the committee on Appropriations, House of Representatives, 98th Congress, First Session, June 9, 1983, pp.764-765.



Table A.3

CONGRESSIONAL ACTION ON THE DEPARTMENT OF DEFENSE'S
MULTIYEAR PROCUREMENT CANDIDATES, FISCAL YEAR 1984

System/Subsystem	Government Accounting Office (GAO) Opinion		Congressional Action On MYP Authority	
	Unsatisfied Requirements ¹ (1)	MYP Status (2)	Authorization (3)	Appropriation (4)
Air Force: <u>B-1B (Airframe, Engine Offensive and Defensive Avionics)²</u>	Cost Confidence Savings Funding Stability Design Stability	Unfavorable	Approved ⁴	Approved
F-15 Airframe	Cost Confidence Savings Funding Stability	Unfavorable	Denied (Savings Funding Stability)	--
KC-135 Re-engining	Cost Confidence Savings Funding Stability Design Stability	Unfavorable	Denied (Savings Funding Stability)	--
Army: <u>AH-64 Engine</u>	Cost Confidence Savings	Unfavorable	Denied (Savings)	--
Armored Combat Earthmover (M-9)	Cost Confidence Savings	Unfavorable	N.A.	Approved
Bradley Fighting Vehicle (Transmission, Turret Drive, Power Control Unit, Tow subsystem) ²	Cost Confidence Savings Design Stability Funding Stability ³	Unfavorable	N.A.	Approved
CH-47D Modification	--	Favorable	Denied (Savings)	--
M-60 Tank Thermal Sight	Cost Confidence	Unfavorable	N.A.	Approved ⁶
Tow II Missile	Cost Confidence	Unfavorable	Denied (Savings)	--
Navy: <u>AN/SSQ-62B Sonobuoy</u>	Cost Confidence	Unfavorable	Denied (Savings Design Stability)	--
AN/TSQ-111 CNCE	Cost Confidence Req. Stability ³ Funding Stability ³	Unfavorable	Denied Implicitly ⁵	--
F/A-18 Engine	Cost Confidence Req. Stability Funding Stability	Unfavorable	Denied (Savings)	--
LSD-41 Ship	Cost Confidence	Unfavorable	Approved	Denied ⁷
MK-30 Target	Cost Confidence Design Stability	Unfavorable	Denied (Funds Available for Annual)	--
MK-45 Gun Mount	Cost Confidence	Unfavorable	N.A.	Approved
TB-16 Sonar	Cost Confidence	Unfavorable	N.A.	Approved



Table A.3
Page 2 of 2

Abbreviation: N.A. = Not Available

- Notes:
1. Savings were listed as questionable if less than 5% based on budgetary data.
 2. Unsatisfactory requirements do not necessarily apply to all subsystems.
 3. Government Accounting Office, Analysis of Multiyear Procurement Candidates Included in Defense's Fiscal Year 1984 Budget Request (GAO/NSIAD 83-70), (Washington, D.C.: Government Printing Office), September 30, 1983, pp. 8-9.
 4. Approved by House and Senate Authorization Committees, House of Representatives, Department Authorization Act, 1984, House Report, Report No. 98-107, May 11, 1983. Senate, Omnibus Defense Authorization Act, 1984, Senate Report No. 98-174, July 5, 1983 (Washington, D.C.: Government Printing Office.)
 5. Senate Committee, Department of Defense's Appropriation Bill, 1984, Senate Report, Report No. 98-292, November 1, 1983, pp. 77.
 6. Department of Defense For 1985, Part 4, information provided by the Office of the Secretary of Defense to a subcommittee of the Committee on Appropriations, House of Representatives, 98th Congress, Second Session, May 10, 1984, pp. 786.
 7. House of Representatives, Making Appropriations For the Department of Defense for the Fiscal Year Ending September 30, 1984, Conference Report, Report No. 95-567, (Washington, D.C.: Government Printing Office), Nov. 18, 1983, pp. 49.

- Sources:
- | | |
|------------|--|
| Column (1) | Government Accounting Office, <u>Statement of Robert M. Gilroy, Senior Associate Director National Security and International Affairs Division before the Subcommittee on Defense House Committee on Appropriations</u> , (Washington, D.C.: Government Printing Office), June 9, 1983, p. 13. |
| Column (2) | Government Accounting Office, <u>Analysis of Multiyear Procurement Candidates Included in Defense's Fiscal Year 1984 Budget Request (GAO/NSIAD 83-70)</u> , (Washington, D.C.: Government Printing Office), September 30, 1983, pp. 8-12. |
| Column (3) | House of Representatives, <u>Department of Defense Authorization Act, 1984</u> , Conference Report, Report No. 98-352, (Washington, D.C.: Government Printing Office), September 12, 1983, p. 9. |
| Column (4) | Approved by House and Senate Appropriation Committee, <u>Department of Defense Appropriation Bill, 1984</u> , House Report, Report No. 98-427, October 20, 1983, pp. 106. Senate Report, Report No. 98-292, November 1, 1983, pp. 77. |

- A3.1 -



Table A.4

OUTCOMES OF MULTIYEAR PROCUREMENT (MYP)
SUBMISSIONS FOR FISCAL YEAR 1985

Multiyear Procurement Candidate (1)	Action Taken As A Result Of:		
	Service Review (2)	OSD Review (3)	Congressional Review (4)
Air Force:			
Airborne Warning and Control System	D	---	---
AN/ARC -170 Radio	D	---	---
DSCS III	A	A	A
Inertial Upper Stage	A	D	---
F-16 Airframe	A	A	A
F-16 Radar	D	---	---
F-16 Simulator	A	A	D
Low-level Laser Guided Bomb	D	---	---
Army:			
AH-64	A	D	---
Bradley Fighting Vehicle	D	---	---
Bradley Turret Drive	A	A	A
Bushmaster 25mm Gun	A	A	D
CH-47D Modernization	A	A	A
5-ton Truck (M939)	A	A	A
Shop Equipment CMV	A	A	A
Tow II Missile	A	A	D
UH/EH-60 Airframe	A	A	A
Navy:			
AN/SSQ-36 Sonobuoy	A	D	---
AN/SSQ-77	A	A	A
CH/MH-53E Airframe	A	A	A
Sealift Support	D	---	---
SH-60B	A	D	---

Abbreviations: A = Approved
D = Disapproved

Sources: Columns (1)-(3) General Accounting Office, Analysis of DOD's Fiscal Year 1985 Multiyear Procurement Candidates, (Washington, D.C.: U.S. Government Printing Office), October 25, 1984.

Column (4)

The Bureau of National Affairs, Inc.
"GAO Questions Fitness of Five Weapon Systems For Multiyear Procurement," Federal Contracts Report, Vol. 42, November 25, 1984, pp. 803-804.



Table A.5

REASONS FOR THE MILITARY SERVICES
AND OSD REJECTIONS OF POTENTIAL MULTICYEAR
PROCUREMENT CANDIDATES, FISCAL YEAR 1985

<u>Candidate Rejected By:</u>	<u>Reason For Rejection</u> (1)
<u>Air Force:</u>	
Airborne Warning and Control System	Unstable Requirements
AN/ARC-170 Radio	Insufficient Savings
F-16 Radar	Unstable Configuration
Low-level Laser Guided Bomb	Unstable Configuration
<u>Army:</u>	
Bradley Fighting Vehicle	Insufficient Savings
<u>Navy:</u>	
Sealift Support	Unstable Program and Cost Estimates
<u>OSD:</u>	
AH-64 (Army)	Low Confidence in Cost Estimates
AN/SSQ-77 (Navy)	Unstable Requirement
Inertial Upper Stage (Air Force)	Operational Failure in June 1983
SH-60B (Navy)	Unstable Requirement and Funding

Source: General Accounting Office, Analysis of DOD's Fiscal Year 1985 Multiyear Procurement Candidates, (Washington, D.C.: U.S. Government Printing Office), October 25, 1984, p.9.



Table A.6

CONGRESSIONAL ACTION ON THE DEPARTMENT
OF DEFENSE'S MULTIFYEAR PROCUREMENT CANDIDATES,
FISCAL YEAR 1985

System/Subsystem	General Accounting Office (GAO) Opinion		Congressional Action On MYP Authority	
	Unsatisfied Requirement ¹ (1)	MYP Status (2)	Authorization (3)	Appropriation (4)
Air Force:				
F-16 Airframe	Cost Confidence	Favorable	Approved	Approved
F-16 Simulator	Cost Confidence Savings Design Stability	Unfavorable	NA	Denied (Savings, Design Stability)
DSCS III	Cost Confidence	Favorable	NA	Approved ²
Army:				
UH/EH-60A Airframe	Cost Confidence	Favorable	Approved	Approved
CH-47D Modernization	Cost Confidence	Favorable	Approved	Approved
5-Ton Truck (M939)	Cost Confidence	Favorable	Approved	Approved
Tow II Missile	Cost Confidence Req. Stability Funding Stability	Unfavorable	Approved	Denied ² (Funding Stability, Cost Growth)
Shop Equipment CMV	Cost Confidence Funding Stability Design Stability	Unfavorable	Approved	Approved
Bradley Turret Drive	Cost Confidence Savings Req. Stability	Unfavorable	NA	Approved
Bushmaster 25mm Gun	Cost Confidence Req. Stability Funding Stability	Unfavorable	Approved	Denied (Req. Stability Funding Stability)
Navy:				
CH/MH-5E Airframe	Cost Confidence	Favorable	Approved	Approved
AN/SSQ-36 Sonobuoy	Cost Confidence	Unfavorable	Approved	Approved

Abbreviation: NA = Not Available

- Notes:
1. GAO notes that none of the 12 candidates met the cost confidence criteria because firm proposals were unavailable at the time of their evaluations.
 2. The Bureau of National Affairs, Inc., "GAO Questions Fitness of Five Weapon Systems For Multiyear Procurement," Federal Contracts Report, Vol. 42, November 23, 1984., pp. 803-804.

Sources: Column (1) General Accounting Office, Analysis of DOD's Fiscal Year 1985 Year Multiyear Procurement Candidates, (Washington, D.C.: U.S. Government Printing Office), October 25, 1984, pp. 15.

Column (2) Ibid., p. 2.

Column (3) House of Representatives, Department of Defense Authorization Act, 1985, Conference Report, Report No. 98-1080, (Washington D.C.: U.S. Government Printing Office), September 26, 1984, pp. 8-12.

Column (4) Agreement between the House and Senate Appropriation Committees, House of Representatives, Department of Defense Appropriation Bill, 1985, House Report, Report No. 98-1086; Senate Report, Report No. 98-636, (Washington, D.C.: U.S. Government Printing Office), Sept. 26, 1984.



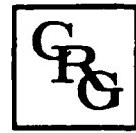
APPENDIX B

SUCCESSFUL MULTIYEAR PACKAGE SUBMISSIONS

- DSCS III

- F-16

**COMMONWEALTH RESEARCH GROUP, INC.
BOSTON, MASSACHUSETTS**



- DSCS III

COMMONWEALTH RESEARCH GROUP, INC.
BOSTON MASSACHUSETTS



MULTIYEAR PROCUREMENT CRITERIA

DEFENSE SATELLITE COMMUNICATIONS SYSTEM PHASE III (DSCS III)
SPACECRAFT PRODUCTION
(FY84-88)

The Department of Defense is proposing to purchase seven DSCS III spacecraft from the General Electric Company with a multiyear procurement (MYP) contract in FY85. A multiyear advance procurement of economic order quantities of parts and materials for seven satellites was approved by Congress and awarded in Jan 84. This updated set of exhibits represents the benefit of continuing the MYP into the production phase.

CRITERIA

Benefit to Government - A DSCS III multiyear contract is projected to save \$139.8 million (TY) or 18.0% over an annual buy at the same production rate, across five years of procurement (FY 84-88).

Stability of Requirement - The DSCS III production rate was stabilized when the DEPSECDEF approved the production of DSCS III in Dec 81. A firm requirement for 12 production DSCS III spacecraft was established in 1978 by DCA to replace the current DSCS II system. There are no available alternative spacecraft to perform the DSCS mission, and the DSCS III will provide critical national communications support through the 1990s. Five DSCS III satellites are now on contract via annual buy contracting. The first production contract was awarded in Jan 82 and was preceded by an advance parts buy a year earlier. The multiyear contract would be for the seven remaining spacecraft.

Stability of Funding - The current Five Year Defense Plan contains sufficient funding to support the proposed MYP program. MYP end-item quantity by year will be fully funded. The Air Force, Department of Defense, Defense Communications Agency, other Government agencies and the Congress are committed to the DSCS III program.

Stable Configuration - In early 1976, the Air Force made a decision to develop a DSCS III to provide increased capabilities. The first Development Flight Satellite was launched in Oct 82, successfully completed on-orbit testing, and has been used operationally since May 83. The current production spacecraft on contract will contain improvements approved by the DEPSECDEF in Dec 81. The seven satellites contracted for by MYP will have no basic design changes from the five production satellites currently on contract.

Degree of Confidence - The cost estimates are based upon comparative contractor proposals of annual and MYP contracts. They are consistent with actual costs to date over more than two years of production experience, with anticipated economies of production included. The proposed multiyear funding and projected savings are considered reasonable, with a high level of confidence.

Degree of Confidence in Contractor Capability - The Air Force has a very high degree of confidence in the contractor that will produce the DSCS III spacecraft. These capabilities have been proven through the history of the DSCS III program and General Electric's commitment to space communications. Although the contractor experienced cost growth problems in the initial stages of the development contract, he has performed within negotiated costs and on schedule for the last four years.

MYP-1

- B1 -

COMMONWEALTH RESEARCH GROUP, INC.
BOSTON, MASSACHUSETTS



ACQUISITION STRATEGY COMPARATIVE SUMMARY
DSCS III PRODUCTION (FY84 - FY88)

	<u>ANNUAL CONTRACT</u>	<u>MYP ALTERNATIVE</u>
NR UNITS (FY 84-88)	7	7
TOTAL CONTRACT PRICE	776.1	636.3
CANCELLATION CEILING		0.0
\$ COST AVOIDANCE		139.8
% COST AVOIDANCE		18.7
<u>RISK RELATED FACTORS**</u>		<u>RISK</u>
- REQUIREMENT STABILITY		LOW
- FUNDING STABILITY		LOW
- CONFIGURATION STABILITY		LOW
- COST CONFIDENCE		LOW

* The annual program requirements are based on an equivalent (equal quantities) program and do not correspond to any official budget estimate funding profile.

** An explanation of the risk assessment for each factor is included in the exhibit which addresses the multiyear procurement criteria.

MYP-2

- B2 -

COMMONWEALTH RESEARCH GROUP, INC.
 BOSTON, MASSACHUSETTS



TOTAL PROGRAM FUNDING PLAN
DODCS III PRODUCTION (FY84-88)
 (Then Year \$ in Millions)

ANNUAL PROGRAM	FY84	FY85	FY86	FY87	FY88	TOTAL
QUANTITY		2	2	2	1	7
END ITEM	26.1	233.3	212.8	218.5	155.6	846.3
LESS ADV PROCUREMENT		-27.4	-27.4	-31.0	-16.0	-102.6
NET REQUEST	26.1	205.9	185.4	186.7	139.6	743.7
ADVANCE PROCUREMENT (FY 85)	<u>51.8</u>	—	<u>57.8</u>	—	—	<u>102.6</u>
(FY 86)	(27.4)	—	—	—	—	(27.4)
(FY 87)	(27.4)	—	—	—	—	(27.4)
(FY 88)	—	—	(31.8)	(16.0)	—	(31.8)
TOTAL BUDGET REQUEST	80.9	205.9	233.2	186.7	139.6	846.3
MULTIYEAR PROGRAM	FY84	FY85	FY86	FY87	FY88	TOTAL
QUANTITY		2	2	2	1	7
END ITEM		208.1	178.4	169.1	84.7	636.3
LESS ADV PROCUREMENT		-23.2	-52.2	-51.9	-25.9	-153.2
NET REQUEST	—	184.9	122.2	117.2	58.8	483.1
ADVANCE PROCUREMENT (FY 85)	<u>81.6</u>	<u>52.3</u>	<u>13.7</u>	<u>5.5</u>	—	<u>153.2</u>
(FY 86)	(23.2)	(23.2)	(29.0)	—	—	(23.2)
(FY 87)	(23.2)	(23.2)	(17.1)	(11.6)	—	(52.2)
(FY 88)	(12.0)	(6.3)	(2.1)	(5.5)	—	(51.9)
TOTAL MULTIYEAR COST	81.6	237.3	135.9	122.7	58.8	636.3
NON-NYP REQUIREMENTS	26.1	13.9	13.3	6.5	10.4	70.2
TOTAL BUDGET REQUEST	107.7	251.2	149.2	129.2	69.2	706.5
NYP SAVINGS	-26.8	-45.3	+84.0	+57.5	+70.4	+139.8
OUTLAYS	FY84	FY85	FY86	FY87	FY88	TOTAL
ANNUAL	36.5	60.0	148.0	189.8	177.1	846.3
MULTIYEAR	52.4	99.1	136.6	153.2	125.5	706.5
SAVINGS	-15.9	-39.1	+11.4	+36.6	+51.6	+139.8

* Annual program funding requirements are based on an equivalent (equal quantities) program and do not correspond to any official budget estimate funding profile.

NTP-3

- B3 -



CONTRACT FUNDING PLAN
DSCS III PRODUCTION (FY84-88)
 (Then Year \$ in Millions)

<u>ANNUAL PROGRAM</u>	<u>FY84</u>	<u>FY85</u>	<u>FY86</u>	<u>FY87</u>	<u>FY88</u>	<u>TOTAL</u>				
QUANTITY		2	2	2	1	7				
END ITEM		219.4	199.5	212.0	145.2	776.1				
LESS ADV PROCUREMENT		<u>-27.4</u>	<u>-27.4</u>	<u>-31.8</u>	<u>-16.0</u>	<u>-102.6</u>				
NET REQUEST		192.0	172.1	180.2	129.2	673.5				
ADVANCE PROCUREMENT	<u>54.8</u>	<u>(27.4)</u>	<u>47.8</u>	<u>—</u>	<u>—</u>	<u>102.6</u>				
(FY 85)						(27.4)				
(FY 86)						(27.4)				
(FY 87)						(31.8)				
(FY 88)						(16.0)				
TOTAL BUDGET REQUEST	54.8	192.0	219.9	180.2	129.2	776.1				
<u>MULTIYEAR PROGRAM</u>	<u>FY84</u>	<u>FY85</u>	<u>FY86</u>	<u>FY87</u>	<u>FY88</u>	<u>TOTAL</u>				
QUANTITY		2	2	2	1	7				
END ITEM		208.1	179.4	169.1	84.7	636.3				
LESS ADV PROCUREMENT		<u>-33.2</u>	<u>-52.2</u>	<u>-51.9</u>	<u>-25.3</u>	<u>-153.2</u>				
NET REQUEST		184.9	122.2	117.2	58.8	483.1				
ADVANCE PROCUREMENT	<u>81.6</u>	<u>(23.2)</u>	<u>52.4</u>	<u>13.7</u>	<u>5.5</u>	<u>153.2</u>				
(FY 85)						(23.2)				
(FY 86)						(52.2)				
(FY 87)						(51.9)				
(FY 88)						(25.9)				
TOTAL MULTIYEAR COST	81.6	237.3	135.9	122.7	58.8	636.3				
HYP SAVINGS	-26.8	-45.3	+84.0	+57.5	+70.4	+139.8				
<u>OUTLAWS</u>	<u>FY84</u>	<u>FY85</u>	<u>FY86</u>	<u>FY87</u>	<u>FY88</u>	<u>FY89</u>	<u>FY90</u>	<u>FY91</u>	<u>FY92</u>	<u>TOTAL</u>
ANNUAL	32.5	47.8	131.7	176.7	166.4	133.6	65.3	17.4	4.7	776.1
MULTIYEAR	48.4	86.9	120.3	180.1	118.8	80.1	34.3	9.2	2.2	636.3
DIFFERENCE	-15.9	-39.1	+11.4	+36.6	+51.6	+53.5	+31.0	+8.2	+2.5	+139.8
<u>DELIVERIES</u>										
ANNUAL					2	2	2	1		7
MULTIYEAR					2	2	2	1		7

* Annual program funding requirements are based on an equivalent (equal quantities) program and do not correspond to any official budget estimate funding profile.

HYP-4

- B4 -

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**IMPACT OF INFLATION ON FUNDING
DSCS III PRODUCTION (FY 84-88)
TOA (Then Year \$ in Millions)**

<u>ANNUAL PLAN</u>	FY84	FY85	FY86	FY87	FY88	<u>TOTAL</u>
<u>Contract</u>						
+2%	55.9	195.8	224.3	183.8	131.8	791.6
+1%	55.3	193.9	222.1	182.0	130.5	783.8
Budget	54.8	192.0	219.9	180.2	129.2	776.1
-1%	53.2	190.1	217.7	178.4	127.9	768.3
-2%	53.7	188.2	215.5	176.6	126.6	760.6
<u>Total Program</u>						
+2%	82.5	210.0	237.8	190.4	142.4	863.1
+1%	81.7	207.9	235.5	188.6	141.0	854.7
Budget	80.9	205.9	233.2	186.7	139.6	846.3
-1%	80.1	203.8	230.9	184.8	138.2	837.8
-2%	79.3	201.8	228.5	182.9	136.8	829.3
<u>MULTIYEAR PLAN</u>						
<u>Contract</u>						
+2%	83.2	242.0	138.6	125.2	60.0	649.0
+1%	82.4	239.7	137.3	123.9	59.4	642.7
Budget	81.6	237.3	135.9	122.7	58.8	636.3
-1%	80.8	234.9	134.5	121.5	58.2	629.9
-2%	80.0	232.5	133.2	120.2	57.6	623.5
<u>Total Program</u>						
+2%	109.8	256.2	152.2	131.8	70.6	720.6
+1%	108.8	253.7	150.7	130.5	69.9	713.6
Budget	107.7	251.2	149.2	129.2	69.2	706.5
-1%	106.6	248.7	147.7	127.9	68.5	699.4
-2%	105.5	246.2	146.2	126.6	67.8	692.3

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BOSTON, MASSACHUSETTS



SAVINGS AND COST AVOIDANCE
DSCS III PRODUCTION (FY 84-88)
CONTRACT SUMMARY

QTY	FY85 2	FY86 2	FY87 2	FY88 1	TOTAL 7
ANNUAL CONTRACT*	219.4	199.5	212.0	145.2	776.1
MULTIYEAR CONTRACT*	208.1	174.4	169.1	88.7	636.3
DIFFERENCE	+11.3	+25.1	+42.9	+56.5	+139.8

* End Item TOA comparison

SOURCE OF SAVINGS	(\$ IN MILLIONS)
Inflation	34.9
Vendor/Subcontractor	60.8
Other	44.1
TOTAL	139.8

INFLATION

As a result of early buys of parts and materials, inflation costs are avoided. Also, early prime and subcontractor efforts result in lower labor rates.

VENOR/SUBCONTRACTOR

Economic order quantities resulting from a single buy out replace individual lot charges and eliminate the start-stop-start inefficiencies which are very costly. Increased efficiencies and steady manufacturing of satellite components provide a reduced cost.

OTHER

As a result of single buy outs of vendors and subcontractors, a reduction in prime contractor subcontractor management support is obtained. Major efficiencies are also obtained by the prime contractor in the manufacturing, assembly and test of spacecraft components due to the efficient, steady delivery of parts and assemblies from the vendors and subcontractors.

MYP-6

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IMPACT ON DEFENSE INDUSTRIAL BASE OF THE MULTICYEAR PROGRAM

DSCS III PRODUCTION (FY 84-88)

Improved Competition

a. Multiyear procurement (MYP) promotes a more stable business base, reduces overhead and fosters economies of scale that are more in line with commercial practice. This will permit the contractor to be more effective in the competition for corporate investment funds for productivity improvement, cost reductions, and increased production surge capability.

b. An MYP approach will allow the contractor to place contracts with subcontractors and vendors in a more economical manner, considering leadtime, investment, shelf life, etc. As such, competition will vary depending on the manner used in each specific case. One year contracts, even one-year contracts with options, do not provide this benefit. Moreover, MYP could increase competition from vendors who are interested in a more stable business base.

Enhance Investment

a. Prime contractor - As noted above, the contractor will be more competitive within their corporate structure with MYP. This could induce corporate management to increase investment to foster a more productive (profitable) operation, which could contribute to overall capability and productivity, and further benefit other DOD programs.

b. Vendors/Subcontractors - The MYP will have a stimulating effect on investment by subcontractors and vendors. The potential for a more stable business base could lead other companies to acquire the capability and personnel to qualify for government business.

Improvement in Vendor Skill Levels - By expanding the period of performance, vendors will be better able to develop and maintain capability, retain skilled labor, maintain affordable technicians, and be encouraged to improve the quality of their output.

Training Program - Appropriate training at prime and subcontractor/vendor levels will be established to promote efficient use of manufacturing labor.

Progress Payment Changes - Appropriate progress payment provisions will be established during contract negotiations. No unusual progress payment provisions are anticipated.

Use of Multiyear Contractors (Vendors) - Prime and subcontractors/vendors may be induced to secure multiyear commitments through deferred delivery, pre-priced options, or stockpiling of vendor parts. This will have a positive effect on price and delivery.

Increased Production Capacity - The overall effect of MYP should broaden the production base. Increased interest of vendors in the more stable business base, and termination protection in the cutyears will lead to new entries and increased capabilities of established vendors, which will contribute to an overall increase in industrial capacity.

MYP-7



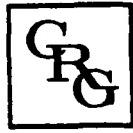
PRESENT VALUE ANALYSIS
DSCS III PRODUCTION

	<u>OUTLAYS</u>									
	FY84	FY85	FY86	FY87	FY88	FY89	FY90	FY91	FY92	TOTAL
<u>ANNUAL PROPOSAL</u>										
THEN YEAR DOLLARS	32.5	47.8	131.7	176.7	166.4	133.6	65.3	17.4	.7	776.1
CONSTANT DOLLARS (\$4)	32.5	44.9	116.8	148.4	132.8	101.8	47.5	12.1	3.1	639.9
PRESENT VALUE	31.0	38.9	92.0	106.4	86.6	60.3	25.6	5.9	1.4	448.1
<u>MULTIYEAR PROPOSAL</u>										
THEN YEAR DOLLARS	48.4	86.9	120.3	140.1	114.8	80.1	34.3	9.2	2.2	636.3
CONSTANT DOLLARS (\$4)	48.4	81.7	106.6	117.6	91.6	61.0	24.9	6.4	1.5	539.7
PRESENT VALUE	46.2	70.8	84.0	84.3	59.7	36.1	13.4	3.1	.7	398.3
<u>DIFFERENCE</u>										
THEN YEAR DOLLARS	-15.9	-39.1	11.4	36.6	51.6	53.5	31.0	8.2	2.5	139.8
CONSTANT DOLLARS (\$4)	-15.9	-36.8	10.2	30.8	41.2	40.8	22.6	5.7	1.6	100.2
PRESENT VALUE	-15.2	-31.9	8.0	22.1	26.9	24.2	12.2	2.8	.7	49.8

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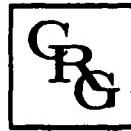
INTERNAL RATE OF RETURN ANALYSIS
 DSCS III PRODUCTION
 MULTYEAR VS ANNUAL BUY
 (\$ in Millions)

<u>BUTILAX BASIS</u>	FY84	FY85	FY86	FY87	FY88	FY89	FY90	FY91	FY92	<u>TOTAL</u>	
Then Year Dollar Difference	15.9	39.1	-11.4	-36.6	-51.6	-53.5	-31.0	-8.2	-2.5	-139.8	
IRR = 43.6%											
Constant FY 84 Dollar Difference	15.9	36.8	-10.2	-30.8	-41.2	-40.8	-22.6	-5.7	-1.6	-100.2	
IRR = 36.0%											
<u>BUDGET BASIS</u>	FY84	FY85	FY86	FY87	FY88	<u>TOTAL</u>					
TOA Difference	+26.8	+45.3	-84.0	-57.5	-70.4	-139.8					
IRR = 63.4%											

HYP-9

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MULTIYEAR FUNDING PROFILE
DSCS III PRODUCTION
(Then Year \$ in Millions)

	FY85	FY86	FY87	FY88	TOTAL
Multiyear Funding Requirements	81.6	237.3	135.9	122.7	636.3
Non-MYP Funding Requirements	<u>-26.1</u>	<u>-13.9</u>	<u>-13.3</u>	<u>-6.5</u>	<u>-70.2</u>
Total Funding Requirements by Source (MPAF, 33110F)	107.7	251.2	149.2	129.2	706.5
FY85 President's Budget Submission Funding for this Multiyear Program by Source (MPAF, 33110F)	107.7	291.2	149.5	148.1	778.1
Difference (85 PB to MYP)	0	(40.0)	(0.3)	(14.9)	(71.6)

MYP-10
 (AF/OSD Use Only)

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- F-16

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17 FEB 1984

MULTIYEAR EXHIBIT # 1
MULTIYEAR PROCUREMENT CRITERIA
F-16 C/D AIRCRAFT PRODUCTION (FY86-FY89)

The Department of Defense is proposing to purchase 864 F-16 aircraft from General Dynamics in FY86 through FY89. The Air Force plans to procure 720 of these aircraft as a core multiyear program. Annual variation in quantity options are also planned for up to 36 aircraft per year for FY86 through 89 to support documented force structure requirements. This exhibit package is structured to reflect a multiyear program of 720 aircraft with and without the annual buy options. Most of the exhibits contain two pages, with the first one reflecting a pure 720 aircraft multiyear program and the second one showing a 720 aircraft multiyear program with annual buy options of 144 aircraft. Exhibits 1 and 7 include only one page since they reflect the total program.

CRITERIA

Benefit to the Government. Multiyear savings over FY86-FY89 annual procurement for the 720 aircraft multiyear program are projected to provide efficiencies to aircraft procurement cost estimated at 8.4% or \$358.3 million (TY). The addition of the annual buy options for 144 aircraft dampens these savings to a net of 4.6% or \$227.1 million (TY).

Stability of Requirement. The F-16 production rate profile and FYDP quantity has stabilized with the approved DEFSECDEF production profile.

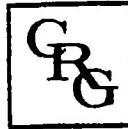
Stability of Configuration. During the planned multiyear period, no basic design changes are envisioned for the F-16 aircraft. Planned upgrades have been included in base costs. This multiyear program provides only for C and D model F-16s. Should the F-16E be selected as the Dual Role Fighter, the high degree of common parts would ensure continued configuration stability and sustain the anticipated savings.

Degree of Cost Confidence. The cost history of the F-16 has been more than acceptable. Each of the contractor's previous F-16 aircraft proposals has been subjected to rigorous cost analysis and negotiation. The resulting F-16 production contracts are expected to be completed 2-3% under target cost.

Degree of Confidence in Contractor Capability. The F-16 contractors have demonstrated their capability to perform the contractually required tasks on schedule within negotiated costs. General Dynamics has been producing F-16 aircraft since 1977, has delivered over 1000 F-16 aircraft and is currently producing aircraft at a production rate of 19 per month including FMS aircraft.

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MULTIYEAR EXHIBIT #2
 ACQUISITION STRATEGY COMPARATIVE SUMMARY
 F-16 PRODUCTION*(FY86-FY89) CONTRACT
 (TYS IN MILLIONS)

	ANNUAL PROGRAM	MULTIYEAR PROGRAM*
NR UNITS (FY86-FY89)	720	720
TOTAL CONTRACT PRICE	4253.5	3895.2
CANCELLATION CEILING (UNFUNDED)		0
% COST AVOIDANCE		358.3
% COST AVOIDANCE		8.4
RISK RELATED FACTORS **		RISK
-REQUIREMENT STABILITY		LOW
-FUNDING STABILITY		LOW
-CONFIGURATION STABILITY		LOW
-COST CONFIDENCE		LOW
CANCELLATION CEILING BY YEAR		
FY85		0
FY86		0
FY87		0
FY88		0
FY89		0

** AN EXPLANATION OF THE RISK FACTORS IS ADDRESSED IN MULTIYEAR EXHIBIT # 1

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MULTIYEAR EXHIBIT # 2A
 ACQUISITION STRATEGY COMPARATIVE SUMMARY
 F-16 PRODUCTION (FY86-FY89) CONTRACT
 (TYS IN MILLIONS)

	ANNUAL PROGRAM	MULTIYEAR PROGRAM*
NR UNITS (FY86-FY89)	864	864
QUANTITY	4971.2	4744.1
TOTAL CONTRACT PRICE		
CANCELLATION CEILING (UNFUNDED)		0
\$ COST AVOIDANCE		227.1
% COST AVOIDANCE		4.6
RISK RELATED FACTORS **		RISK
-REQUIREMENT STABILITY		LOW
-FUNDING STABILITY		LOW
-CONFIGURATION STABILITY		LOW
-COST CONFIDENCE		HIGH
CANCELLATION CEILING BY YEAR		
FY85		0
FY86		0
FY87		0
FY88		0
FY89		0

* ASSUMES CORE MULTIYEAR PROGRAM OF 720 A/C WITH OPTIONAL ANNUAL BUY QUANTITIES OF 144 A/C
 ** AN EXPLANATION OF THE RISK FACTORS IS ADDRESSED IN MULTIYEAR EXHIBIT # 1

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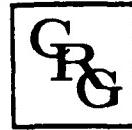


MULTIYEAR EXHIBIT # 3
 TOTAL PROGRAM FUNDING PLAN
 F-16 PRODUCTION (FY86-FY89)
 (TYS IN MILLIONS)

ANNUAL PROGRAM	85	86	87	88	89	TOTAL
QUANTITY		180	180	180	180	720
END ITEM	3501.4	3479.2	3628.4	3621.0	14230.5	
LESS ADV PROCUREMENT	-416.1	-432.9	-450.8	-511.5	-1011.3	
NET REQUEST	3085.3	3046.3	3177.6	3109.5	12418.7	
ADVANCE PROCUREMENT						
FY86	416.1					416.1
FY87	0.0	432.9				432.9
FY88		0.0	450.8			450.8
FY89			0.0	481.5		481.5
FY90/91				0.0	504.3	504.3
TOTAL BUDGET REQUEST	416.1	3518.2	3497.1	3659.1	3613.8	14704.3
MULTIYEAR PROGRAM	85	86	87	88	89	TOTAL
MULTIYEAR QUANTITY		180	180	180	180	720
END ITEM	948.0	958.9	993.5	994.8	3895.2	
LESS ADV PROCUREMENT	-125.7	-191.5	-199.2	-203.8	-720.2	
NET REQUEST	822.3	767.4	794.3	791.0	3175.0	
ADVANCE PROCUREMENT						
FY86	125.7					125.7
FY87	87.7	103.8				191.5
FY88	74.7	69.6	54.9			199.2
FY89	66.9	63.5	21.7	51.7		203.8
TOTAL MULTIYEAR COST	355.0	1059.2	844.0	846.0	791.0	3895.2
NON-HYP REQUIREMENTS	351.3	2555.0	2409.5	2485.9	2649.1	10450.8
TOTAL BUDGET REQUEST	706.3	3614.2	3253.5	3331.9	3440.1	14346.0
HYP SAVINGS	-290.2	-96.0	243.6	327.2	173.7	358.3

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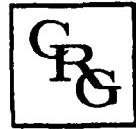


MULTIYEAR EXHIBIT # 3 (continued)
TOTAL PROGRAM FUNDING PLAN
F-16 PRODUCTION (FY86-FY89)
(TYS IN MILLIONS)

OUTLAYS	85	86	87	88	89	90	91	92	93	TOTAL
ANNUAL PROGRAM	42.5	575.9	2301.6	3175.8	3483.3	3245.4	1362.1	386.9	130.8	14704.3
MULTIYEAR PROGRAM	72.1	736.8	2405.2	3062.0	3246.6	3052.8	1283.2	362.8	124.5	14346.0
SAVINGS	-29.6	-160.9	-103.6	113.8	236.7	192.6	78.9	24.1	6.3	358.3

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MULTIYEAR EXHIBIT # 3 A
 TOTAL PROGRAM FUNDING PLAN
 F-16 PRODUCTION (FY86-FY89)
 (TYS IN MILLIONS)

ANNUAL PROGRAM	85	86	87	88	89	TOTAL
QUANTITY		216	216	216	216	864
END ITEM	4135.1	4107.7	4199.3	4243.8	4243.8	16666.1
LESS ADV PROCUREMENT	-477.3	-525.6	-575.8	-570.4	-570.4	-2149.1
NET REQUEST	3637.8	3582.1	3623.7	3673.4	3673.4	14517.0
ADVANCE PROCUREMENT						
FY86	477.3					477.3
FY87	22.0	503.6				525.6
FY88		19.7	556.1			575.8
FY89			14.6	555.8		570.4
FY90/91				15.3	599.5	614.8
TOTAL BUDGET REQUEST	499.3	4161.1	4152.8	4194.8	4272.9	17280.9
MULTIYEAR PROGRAM	85	86	87	88	89	TOTAL
ANNUAL VARIATION IN QTY		36	36	36	36	144
MULTIYEAR QUANTITY		180	180	180	180	720
END ITEM	1147.6	1165.3	1213.2	1218.0	1218.0	4744.1
LESS ADV PROCUREMENT	-153.2	-214.8	-219.3	-223.9	-223.9	-811.2
NET REQUEST	994.4	950.5	993.9	994.1	994.1	3932.9
ADVANCE PROCUREMENT						
FY86	153.2					153.2
FY87	83.9	130.9				214.8
FY88	70.6	65.8	82.9			219.3
FY89	63.3	60.0	20.5	80.1		223.9
TOTAL MULTIYEAR COST	371.0	1231.1	1053.9	1074.0	994.1	4744.1
NON-HYP REQUIREMENTS	416.2	3019.0	2862.5	2856.1	3153.9	12309.7
TOTAL BUDGET REQUEST	787.2	4270.1	3916.4	3930.1	4150.0	17059.8
HYP SAVINGS	-207.9	-109.0	236.4	264.7	122.9	227.1

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MULTIYEAR EXHIBIT # 3A (continued)
TOTAL PROGRAM FUNDING PLAN
F-16 PRODUCTION (FY86-FY89)
(TTS IN MILLIONS)

OUTLAYS	85	86	87	88	89	90	91	92	93	TOTAL
ANNUAL PROGRAM	31.0	684.8	2723.8	3751.8	4055.3	3803.0	1601.9	452.7	154.6	17280.9
MULTIYEAR PROGRAM	80.4	845.8	2836.3	3651.4	3859.0	3654.7	1541.5	434.5	150.2	17053.8
SAVINGS	-29.4	-161.0	-110.3	100.4	196.3	148.3	60.4	18.2	4.4	227.1

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COMMONWEALTH RESEARCH GROUP, INC.
BOSTON, MASSACHUSETTS



MULTIYEAR EXHIBIT # 4
 CONTRACT FUNDING PLAN
 F-16 PRODUCTION (FY86-FY89)
 (TYS IN MILLIONS)

ANNUAL PROGRAM	85	86	87	88	89	TOTAL
QUANTITY		180	180	180	180	720
END ITEM	996.4	1032.4	1103.2	1121.5	4253.5	
LESS ADV PROCUREMENT	-147.0	-135.1	-163.3	-173.3	-638.7	
NET REQUEST	849.4	877.3	939.9	948.2	3614.8	
ADVANCE PROCUREMENT						
FY86	147.0					147.0
FY87	0.0	135.1				135.1
FY88		0.0	163.3			163.3
FY89			0.0	173.3		173.3
TOTAL BUDGET REQUEST	147.0	1004.5	1040.6	1113.2	948.2	4253.5
MULTIYEAR CONTRACT	85	86	87	88	89	TOTAL
MULTIYEAR QUANTITY		180	180	180	180	720
END ITEM	948.0	958.9	993.5	994.8	3895.2	
LESS ADV PROCUREMENT	-125.7	-191.5	-199.2	-203.8	-720.2	
NET REQUEST	822.3	767.4	794.3	791.0	3175.0	
ADVANCE PROCUREMENT						
FY86	125.7					125.7
FY87	87.7	103.8				191.5
FY88	74.7	69.6	54.9			199.2
FY89	66.9	63.5	21.7	51.7		203.8
TOTAL BUDGET REQUEST	355.0	1059.2	844.0	846.0	791.0	3895.2
HYP SAVINGS	-208.0	-54.7	196.6	267.2	157.2	358.3



MULTIYEAR EXHIBIT # 4 (continued)
 TOTAL PROGRAM FUNDING PLAN
 F-16 PRODUCTION (FY86-FY89)
 (TYS IN MILLIONS)

OUTLAYS	85	86	87	88	89	90	91	92	93	TOTAL
ANNUAL CONTRACT	15.0	179.1	669.1	937.7	1034.0	904.6	372.6	107.1	34.3	4253.5
MULTIYEAR CONTRACT	36.2	293.0	733.8	837.5	837.0	738.6	304.2	86.3	28.6	3895.2
SAVINGS	-21.2	-113.9	-64.7	100.2	197.0	166.0	68.4	20.8	5.7	358.3
DELIVERIES										
ANNUAL PROGRAM		43	189	180	180	128				720
MULTIYEAR PROGRAM		43	189	180	180	128				720

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COMMONWEALTH RESEARCH GROUP, INC.
 BOSTON, MASSACHUSETTS



MULTIYEAR EXHIBIT # 4 A
 CONTRACT FUNDING PLAN
 F-16 PRODUCTION (FY86-FY89)
 (TYS IN MILLIONS)

ANNUAL CONTRACT	85	86	87	88	89	TOTAL
QUANTITY		216	216	216	216	864
END ITEM	1163.5		1215.4	1284.8	1307.5	4971.2
LESS ADV PROCUREMENT	-163.8		-184.7	-201.6	-203.2	-755.3
NET REQUEST	999.7		1030.7	1083.2	1102.3	4215.5
ADVANCE PROCUREMENT						
FY86	163.8					163.8
FY87	9.9	174.8				184.7
FY88		10.2	191.4			201.6
FY89			10.8	194.4		205.2
TOTAL BUDGET REQUEST	173.7	1184.7	1232.9	1277.6	1102.3	4971.2
MULTIYEAR CONTRACT	85	86	87	88	89	TOTAL
ANNUAL VARIATION IN QTY	36	36	36	36	36	144
MULTIYEAR QUANTITY	180	180	180	180	180	720
END ITEM	1147.6		1165.3	1213.2	1218.0	4744.1
LESS ADV PROCUREMENT	-153.2		-214.8	-219.3	-223.9	-811.2
NET REQUEST	994.4		950.5	993.9	994.1	3932.5
ADVANCE PROCUREMENT						
FY86	153.2					153.2
FY87	83.9	130.9				214.8
FY88	70.6	65.8	82.9			219.3
FY89	63.3	60.0	20.5	80.1		223.9
TOTAL BUDGET REQUEST	371.0	1251.1	1053.9	1074.0	994.1	4744.1
HYP SAVINGS	-197.3	-66.4	179.0	203.6	108.2	227.1

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COMMONWEALTH RESEARCH GROUP, INC.
 BOSTON, MASSACHUSETTS



MULTIYEAR EXHIBIT # 4 A (continued)
 TOTAL PROGRAM FUNDING PLAN
 F-16 PRODUCTION (FY86-FY89)
 (TY\$ IN MILLIONS)

OUTlays	85	86	87	88	89	90	91	92	93	TOTAL
ANNUAL CONTRACT	17.7	211.4	789.8	1105.2	1201.1	1049.3	432.9	123.9	39.9	4971.2
MULTIYEAR CONTRACT	37.9	320.9	859.4	1023.1	1047.4	927.7	382.8	108.9	36.0	4744.1
SAVINGS	-20.2	-109.5	-69.6	82.1	153.7	121.6	50.1	15.0	3.9	227.1
DELIVERIES										
ANNUAL PROGRAM		66	222	216	216	144			864	
MULTIYEAR PROGRAM		66	222	216	216	144			864	

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COMMONWEALTH RESEARCH GROUP, INC.
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MULTIYEAR EXHIBIT # 3
 IMPACT OF INFLATION ON FUNDING
 P-16 PRODUCTION (FY86-FY89)
 TGA (TYS IN MILLIONS)

ANNUAL	85	86	87	88	89	TOTAL
CONTRACT						
+2%	149.9	1024.6	1061.4	1135.5	967.2	4338.6
+1%	148.5	1014.5	1061.0	1124.3	957.7	4296.0
BUDGET	147.0	1004.5	1040.6	1113.2	948.2	4253.5
-1%	145.5	994.5	1030.2	1102.1	938.7	4211.0
-2%	144.1	984.4	1019.8	1090.9	929.2	4168.4
TOTAL PROGRAM						
+2%	424.5	3588.5	3567.0	3732.3	3686.0	14998.4
+1%	420.3	3553.3	3532.1	3695.7	3649.9	14851.3
BUDGET	416.1	3518.2	3497.1	3659.1	3613.8	14704.3
-1%	412.0	3483.0	3462.1	3622.5	3577.6	14557.2
-2%	407.8	3447.8	3427.1	3586.0	3541.5	14410.2
MULTIYEAR						
	85	86	87	88	89	TOTAL
CONTRACT						
+2%	362.1	1080.4	860.9	862.9	806.8	3973.1
+1%	358.6	1069.8	852.4	854.5	798.9	3934.2
BUDGET	355.0	1059.2	844.0	846.0	791.0	3895.2
-1%	351.5	1048.6	835.6	837.5	783.1	3856.2
-2%	347.9	1038.0	827.1	829.1	775.2	3817.3
TOTAL PROGRAM						
+2%	720.4	3686.5	3318.6	3398.5	3508.9	14632.9
+1%	713.3	3650.3	3286.1	3365.2	3474.5	14489.4
BUDGET	706.3	3614.2	3253.5	3331.9	3440.1	14346.0
-1%	699.2	3578.0	3221.0	3298.6	3405.7	14202.5
-2%	692.1	3541.9	3188.5	3265.2	3371.3	14059.1



MULTIYEAR EXHIBIT # 5 A
 IMPACT OF INFLATION ON FUNDING
 F-16 PRODUCTION (FY86-FY89)
 TOA (TV\$ IN MILLIONS)

ANNUAL	85	86	87	88	89	TOTAL
CONTRACT						
+2%	177.2	1208.4	1257.6	1303.2	1124.3	5070.6
+1%	175.4	1196.3	1245.2	1290.4	1113.3	5020.9
BUDGET	173.7	1184.7	1232.9	1277.6	1102.3	4971.2
-1%	172.0	1172.9	1220.6	1264.8	1091.3	4921.5
-2%	170.2	1161.0	1208.2	1252.0	1080.3	4871.8
TOTAL PROGRAM						
+2%	509.3	4244.3	4235.9	4278.7	4358.4	17626.4
+1%	504.3	4202.7	4194.3	4236.7	4315.6	17453.7
BUDGET	499.3	4161.1	4152.8	4194.8	4272.9	17280.9
-1%	494.3	4119.5	4111.3	4152.9	4230.2	17108.1
-2%	489.3	4077.9	4069.7	4110.9	4187.4	16935.3
MULTIYEAR						
CONTRACT	85	86	87	88	89	TOTAL
+2%	378.4	1276.1	1075.0	1095.5	1014.0	4839.0
+1%	374.7	1263.6	1064.4	1084.7	1004.0	4791.6
BUDGET	371.0	1251.1	1053.9	1074.0	994.1	4744.1
-1%	367.3	1238.6	1043.4	1063.3	984.2	4696.7
-2%	363.6	1226.1	1032.8	1052.5	974.2	4649.2
TOTAL PROGRAM						
+2%	802.9	4355.5	3994.7	4008.7	4233.0	17394.9
+1%	795.1	4312.8	3955.6	3969.4	4191.5	17224.3
BUDGET	787.2	4270.1	3916.4	3930.1	4150.0	17053.8
-1%	779.3	4227.4	3877.2	3890.8	4108.5	16883.3
-2%	771.5	4184.7	3838.1	3851.5	4067.0	16712.7

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MULTIYEAR EXHIBIT # 6
 SAVINGS AND COST AVOIDANCE
 F-16 PRODUCTION (FY86-FY89)
 CONTRACT SUMMARY. (TYS IN MILLIONS)

	85	86	87	88	89	TOTAL
ANNUAL CONTRACT:						
ANNUAL QUANTITY		180	180	180	180	720
ANNUAL COST	147.0	1004.5	1040.6	1113.2	948.2	4253.5
MULTIYEAR CONTRACT:						
MULTIYEAR QUANTITY		180	180	180	180	720
MULTIYEAR COST	355.0	1059.2	844.0	846.0	791.0	3895.2
DIFFERENCE	-208.0	-54.7	196.6	267.2	157.2	358.3
SOURCE OF SAVINGS (\$ IN MILLIONS)						
INFLATION		154.1				
VENDOR PROCUREMENT		164.8				
MANUFACTURING		21.3				
DESIGN/ENGINEERING		17.9				
TOOL DESIGN		0.0				
SUPPORT EQUIPMENT		0.0				
OTHER		0.0				
TOTAL		358.3				

EXPLANATION OF SAVINGS

INFLATION - THE SAVINGS IN THIS AREA IS A RESULT OF CONTRACT COMMITMENTS AND EXPENDITURES BEING MADE AT A FASTER RATE UNDER A MULTIYEAR PROGRAM BECAUSE OF ECONOMIC ORDER QUANTITY BUYS.

VENIOR PROCUREMENT - THE SAVINGS IN THIS AREA (SUBCONTRACTS AND MATERIALS) IS DUE TO THE ABILITY OF THE CONTRACTOR TO BUY IN MORE ECONOMICAL LOTS (EOQ). GD/FW F'S NEGOTIATED QUANTITY BUY DISCOUNT FACTORS WITH EACH OF THEIR VENDORS FOR SEVERAL DIFFERENT PRODUCTION RATES.

MANUFACTURING - THE SAVINGS IN THIS AREA IS A RESULT OF MANHOUR REDUCTIONS IN SET-UP COSTS RESULTING FROM LONGER RUN TIMES, FEWER LOT RELEASES, AND IMPROVED MANUFACTURING PROCESSES.

ENGINEERING - THE SAVINGS IN THIS AREA IS A RESULT OF MULTIYEAR PROGRAM EFFICIENCIES IN THE RESEARCH AND ENGINEERING AREA. MULTIYEAR PROGRAMS ASSUME A STABLE PRODUCTION CONFIGURATION WITH REDUCED ENGINEERING CHANGES AND THUS A REDUCTION IN RESEARCH & ENGINEERING MANHOURS.



MULTIYEAR EXHIBIT # 6 A
 SAVINGS AND COST AVOIDANCE
 P-16 PRODUCTION (FY86-FY89)
 CONTRACT SUMMARY (TV\$ IN MILLIONS)

	85	86	87	88	89	TOTAL
ANNUAL CONTRACT:						
ANNUAL QUANTITY		216	216	216	216	864
ANNUAL COST	173.7	1184.7	1232.9	1277.6	1102.3	4971.2
MULTIYEAR CONTRACT:						
ANNUAL VARIATION IN QTY		36	36	36	36	144
MULTIYEAR QUANTITY		180	180	180	180	720
MULTIYEAR COST	371.0	1251.1	1053.9	1074.0	994.1	4744.1
DIFFERENCE	-197.3	-66.4	179.0	203.6	108.2	227.1
SOURCE OF SAVINGS (\$ IN MILLIONS)						
INFLATION		97.6				
VENDOR PROCUREMENT		104.5				
MANUFACTURING		13.6				
DESIGN/ENGINEERING		11.4				
TOOL DESIGN		0.0				
SUPPORT EQUIPMENT		0.0				
OTHER		0.0				
TOTAL		227.1				

EXPLANATION OF SAVINGS

INFLATION - THE SAVINGS IN THIS AREA IS A RESULT OF CONTRACT COMMITMENTS AND EXPENDITURES BEING MADE AT A FASTER RATE UNDER A MULTIYEAR PROGRAM BECAUSE OF ECONOMIC ORDER QUANTITY BUYS.

VENDOR PROCUREMENT - THE SAVINGS IN THIS AREA (SUBCONTRACTS AND MATERIALS) IS DUE TO THE ABILITY OF THE CONTRACTOR TO BUY IN MORE ECONOMICAL LOTS (EOQ). GD/FW HAS NEGOTIATED QUANTITY BUY DISCOUNT FACTORS WITH EACH OF THEIR VENDORS FOR SEVERAL DIFFERENT PRODUCTION RATES.

MANUFACTURING - THE SAVINGS IN THIS AREA IS A RESULT OF MANHOUR REDUCTIONS IN SET-UP COSTS RESULTING FROM LONGER RUN TIMES, FEWER LOT RELEASES, AND IMPROVED MANUFACTURING PROCESSES.

ENGINEERING - THE SAVINGS IN THIS AREA IS A RESULT OF MULTIYEAR PROGRAM EFFICIENCIES IN THE RESEARCH AND ENGINEERING AREA. MULTIYEAR PROGRAMS ASSUME A STABLE PRODUCTION CONFIGURATION WITH REDUCED ENGINEERING CHANGES AND THIS A REDUCTION IN RESEARCH & ENGINEERING MANHOURS.



MULTIYEAR EXHIBIT # 7
IMPACT ON DEFENSE INDUSTRIAL BASE OF THE MULTIYEAR PROGRAM F-16C/D PRODUCTION (FY86-FY89)

IMPROVED COMPETITION

Effect of MYP versus Annual Buy on Competition. More contractors should be interested because of larger Government commitment. Contractors would be guaranteed longer production runs to amortize nonrecurring costs, stabilize work force and business base, and possibly reduce overhead if winners under multiyear. On the initial F-16 multiyear buy, 16 subsystems/components were compete. This was partially due to multiyear. The subsystems/components for the follow-on F-16 multiyear buy will not be compete again since sufficient option quantities remain from the initial multiyear buy for the follow-on buy.

ENHANCED INVESTMENT

Effect on Capital Investment or Technology Modernization of MYP versus Annual Buy. Increase in capital investment due to multiyear procurement was obtained as a result of initial multiyear contract. The follow-on multiyear contract will have little additional impact. Capital investment, excluding technology modernization, is estimated in excess of \$20 million.

IMPROVEMENT IN VENDOR SKILL LEVELS

Improvement in Vendor Skill Levels That Would Result from MYP versus Annual Buy. The ability to recruit and retain highly-skilled personnel will be enhanced through assurance to employees of longer periods of employment on a multiyear basis. Vendors are allowed to produce in optimum quantities which increase skill levels over life of the contract.

TRAINING PROGRAM

Effect of MYP versus Annual Buy on Training Programs. A stable work force should require less training and replacement of personnel.

PROGRESS PAYMENT CHANGES

Effect on Progress Payments o MYP versus Annual Buy. EOQ will increase the progress payment dollar amounts in the earlier years of the MYP and decrease them later. Total costs go down, and since progress payments are a percent of cost, then they will go down as well.

USE OF MULTIYEAR CONTRACTORS (VENDORS)

Identity of Critical Subcontractors/Suppliers Whose Loss Would Place the Program at Risk. We see no loss of critical subcontractors/suppliers.

Use of MYP versus Annual Buy Effect on the Use of Multiyear Vendors. The use of MYP should flow down to most vendors and subcontractors.



MULTIYEAR EXHIBIT # 7 (continued)

INCREASED PRODUCTION CAPACITY

Effect on Production Surge Capability for Both Annual Buy and MYP. Surge capability should be enhanced; the greater program stability, coupled with the increased probability of investment in production assets/equipment, will tend to provide greater production efficiency/flexibility/surge capability.

Effect on Production Capacity for Both Annual Buy and MYP Alternatives. None to prime.

Effect on Material Lead Time for Critical Materials and Components of MYP versus Annual Buy. Material lead times do not change due to method of contracting. Advance buy and cancellation ceiling provisions in multiyear contracts give the prime contractor the flexibility to order earlier for out year requirements.



MULTIYEAR EXHIBIT # 8
 PRESENT VALUE ANALYSIS
 P-16 PRODUCTION (FY86-FY89)
 CONTRACT SUMMARY (FY\$ IN MIL.)

<u>ANNUAL CONTRACT</u>	85	86	87	88	89	90	91	92	93	TOTAL
THEN YEAR DOLLARS	15.0	179.1	669.1	937.7	1034.0	904.6	372.6	107.1	36.3	4253.5
CONSTANT DOLLARS (85\$)	15.0	169.0	597.9	796.6	838.0	699.6	275.1	75.4	23.0	3489.6
PRESENT VALUE*	14.3	146.5	471.1	571.2	546.4	414.2	148.0	36.9	10.2	2358.8
<u>MULTIYEAR CONTRACT</u>	85	86	87	88	89	90	91	92	93	TOTAL
THEN YEAR DOLLARS	36.2	293.0	733.8	837.5	837.0	738.6	304.2	86.3	28.6	3895.2
CONSTANT DOLLARS (85\$)	36.2	276.3	655.8	711.6	678.4	571.2	224.4	60.7	19.2	3233.8
PRESENT VALUE*	34.5	239.6	516.8	510.2	442.3	338.2	120.7	29.7	8.5	2240.5
<u>DIFFERENCE</u>	85	86	87	88	89	90	91	92	93	TOTAL
THEN YEAR DOLLARS	-21.2	-113.9	-64.7	100.2	197.0	166.0	68.4	20.8	5.7	358.3
CONSTANT DOLLARS (85\$)	-21.2	-107.3	-57.9	85.0	159.6	128.4	50.7	14.7	3.8	259.8
PRESENT VALUE*	-20.2	-93.1	-45.7	61.0	104.1	76.0	27.3	7.2	1.7	118.3

*USED 10% DISCOUNT FACTOR



MULTIYEAR EXHIBIT # 8 A
 PRESENT VALUE ANALYSIS
 P-16 PRODUCTION (FY86-FY89)
 CONTRACT SUMMARY (FY\$ IN MIL.)

<u>ANNUAL CONTRACT</u>	85	86	87	88	89	90	91	92	93	TOTAL
THEN YEAR DOLLARS	17.7	211.4	789.8	1105.2	1201.1	1049.3	432.9	123.9	39.9	4971.2
CONSTANT DOLLARS (85\$)	17.7	199.4	705.8	939.0	973.4	811.6	319.4	87.1	26.8	4080.2
PRESENT VALUE*	16.9	172.9	556.2	673.3	634.7	480.5	171.8	42.6	11.9	2760.8
<u>MULTIYEAR CONTRACT</u>	85	86	87	88	89	90	91	92	93	TOTAL
THEN YEAR DOLLARS	37.9	320.9	859.4	1023.1	1047.4	927.7	382.8	108.9	36.0	4744.1
CONSTANT DOLLARS (85\$)	37.9	302.7	768.0	869.2	848.8	717.6	282.4	76.6	24.2	3927.4
PRESENT VALUE*	36.2	262.4	605.2	523.2	553.4	424.8	151.9	37.5	10.8	2705.4
<u>DIFFERENCE</u>	85	86	87	88	89	90	91	92	93	TOTAL
THEN YEAR DOLLARS	-20.2	-109.5	-69.6	82.1	153.7	121.6	50.1	15.0	3.9	227.1
CONSTANT DOLLARS (85\$)	-20.2	-103.3	-62.2	69.8	124.6	94.0	37.0	10.5	2.6	152.8
PRESENT VALUE*	-19.3	-89.5	-49.0	50.1	81.3	55.7	19.9	5.1	1.1	55.4

*USED 10% DISCOUNT FACTOR



APPENDIX C

GLOSSARY OF TERMS

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APPENDIX C

Glossary

AFPRO	Air Force Plant Representatives Office
AFSC	Air Force Systems Command
BES	Budget Estimate Submission
DOD	Department of Defense
DRB	Defense Resources Board
EOQ	Economic Order Quantity
DSARC	Defense Systems Acquisition Review Council
DSCS III	Defense System Communications Satellite
FAR	Federal Acquisition Regulations
FV	Future Value
FY	Fiscal Year
GAO	Government Accounting Office
HAC	House of Representatives Appropriations Committee
HCA	Head of Contracting Activity
IRR	Internal Rate of Return
MYP	Multiyear Procurement
NTE	Not-To-Exceed
OMB	Office of Management and Budget
OSD	Office of the Secretary of Defense
PAR	Program Assessment Review
PBD	Program Budget Decision
PDM	Program Decision Memorandum
POM	Program Objective Memorandum
PPBS	Planning, Procurement, Budgeting System

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PV **Present Value**
ROM **Rough-Order-of-Magnitude**
SPO **Special Projects Office**
SPR **Secretarial Program Review**
TOA **Total Obligational Authority**

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APPENDIX D

BIBLIOGRAPHY

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**SUMMARY OF THE LITERATURE
ON MULTI-YEAR PROCUREMENT, 1966 TO AUGUST, 1980**

<u>Date</u>	<u>Document Title</u>	<u>Author(s)</u>	<u>Organization</u>	<u>Summary</u>
	(1)	(2)	(3)	(4)
66 AUG 22	Navy Pushing More Multi-Year Purchases Dialogue: 0330201	----- N.A.	----- Technology Week V19 Pt 4	----- N.A.
77 MAY/JUN	Let's Change the Way the Pentagon Does Business: Dialogue 112235	----- Gansler, Jacques S. DOD	----- Harvard Business Review	----- N.A.
78 ---	Federal Agencies Should Be Given General Multiyear Contracting For Supplies and Services: Report To Congress, GPO Item No.: 546-D	----- N.A.	----- G.A.O.	----- N.A.
79 MAY 4-6	The Eighth Annual DODIFAI Acquisition Research Symposium A080971 (DTIC)	----- N.A.	Defense Systems College, Ft. Belvoir, VA	----- Symposium discussing the need for possibility, impact and realistic cost estimating aspects of MYP authorization.
80 FEB	Five Year Budget Projections: FY 1981 - 1985. A report to the Senate and House Committees on the Budget. Part II. A081350 (DTIC)	----- N.A.	CBO	Budget projections to provide baseline for MYP options for FY 1981 budget. Includes estimates of the effects of changes in economic assumptions on the budget outlook.

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**SUMMARY OF THE LITERATURE
ON MULTI-YEAR PROCUREMENT, 1966 TO AUGUST, 1984**

Date	Document Title	Authors	Organization	Summary
	(1)	(2)	(3)	(4)
30 JUN	Selected Effects of Contractor Reactions to Standardization of Avionics Acquisitions. A089331 (DTIC)	Ackerson, Jeffrey Baum, George H.	AF Inst. of Tech Wright - Paterson AFB, OH School of Systems and Logistics.	Survey of contractors concludes standardization will erode company's market position, increase equipment availability and acquisition costs, decrease ownership costs and technological advancements. Appears to be a high degree of interest to obtain MYP
30 FALL	Opportunities to Achieve Savings Through Legislation. Dialogue 192559	Staats, E.B.	GAO Review Vol. 15 No. 4, p. 24	Multiyear planning and budgeting are a preferred approach by the GAO.
30 NOV 24	Slay Urges Increased Multiyear Contracting. Dialogue 1261897	N.A.	Aviation Week v. 113 p. 118	N.A.
30 DEC 01	Defense Science Board Urges Multiyear Contracts. Dialogue 1269181	Robinson, Clarence A.	Aviation Week v. 113, p. 130	N.A.
30 DEC - - -	Improving Productivity and Reducing Cost through Capital Investment Incentives. A094651 (NTIS)	Zable, Wayne V. Knittle, Duane D.	Army Research Office, Fort Lee, Va.	Among others, objectives were to determine: current use and success of MYP, award fee, value engineering, and buy back provisions as incentives.
30 DEC 03	DOD statement on industrial readiness before the House Committee on Armed Services. A101563 (NTIS)	Perry, Wm. J.	Office of Under Secretary of Defense on Research and Engineering	Author concludes: MYP enhances productivity and thereby reduces costs. Legislation needed to repeal the restriction of cancellation ceiling.



**SUMMARY OF THE LITERATURE
ON MULTI-YEAR PROCUREMENT, 1985 TO AUGUST, 1986**

<u>Date</u>	<u>Document Title</u> (1)	<u>Authors</u> (2)	<u>Organization</u> (3)	<u>Summary</u> (4)
		--- 1981 ---		
81 JAN 19	Legislation Prepared to Mandate Multiyear Contracting. Dialogue 1284119	N.A.	Aviation Week v.11 #p. 36	N.A.
81 MAR 16	What Defense will Buy with Its Extra Billions. Dialogue 182923	N.A.	Business Week No. 2679	Reagan Administration claims savings of billions through MYCs
81 APR 29	House SC/Armed Services Held Hearing on Use of MYP Contracts for DOD. Dialogue 013374	N.A.	CR; Source 97-63 Page D469	N.A.
81 APR 30	JEPSEN Proj. 1051 to allow Multiyear Funding for DOD Programs in Order to Lower Costs. Dialogue 013698	N.A.	CR, Source 97-64 Page S4281	N.A.
81 JUN 11	House SC/Appropriations to Hold Hearing on MYP. Dialogue 020082	N.A.	Cr, Source 97-038 Page D704	N.A.
81 JUN 16	House SC/Appropriation Held Hearing on MYP Dialogue 020301	N.A.	CR, Source 97-091 Page D726	N.A.
81 JUN 19	House C/Armed Services to Hold Hearing on MYP & Navy LEASAT and Communications Satellite. Dialogue 021293	N.A.	CR, Source 97-094 Page D759	N.A.

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<u>Date</u>	<u>Document Title</u> (1)	<u>Authors</u> (2)	<u>Organization</u> (3)	<u>Summary</u> (4)
81 JUN 23	House C/Armed Services Held Hearing on MYP and Navy Leased Satellite and Fleet Satellite Programs. Dialogue 021684	N.A.	CR, Source 97-096 Page D 775	N.A.
81 JUN 23	MYP: Hearing Before the Committee on Armed Services, House of Reps., 97th Congress. GPO Item No.: 1012-A, 1012-B	N.A.	US Congress, Committee on Armed Services	N.A.
81 JUN 29	MYC Spurs Dispute within Congress. Dialogue 1345736	N.A.	Aviation Week, v.114 P. 26	N.A.
81 JUL 15	FY82 DOD Authorizations Dialogue 026159	N.A.	CR, Source 97-105 Page H#329	Explanation of provisions for MY Contracting on selective basis for weapons systems.
81 JUL 16	House Proceedings Defense-General Dialogue 024417	N.A.	CR, Source 97-106 Page H#420	Includes Clockman H#467, 30-day disapproval period on agency notification of cancellation of MYC in excess of \$100M.
81 JUL 16	Buying By Pentagon On Multiyear Basis Gains In-House Vote Dialogue 0369700	N.A.	Wall Street Journal v.105, Page 33	N.A.
81 SEP -	Analysis of the Impact of MYP on Weapon System Acquisition A107708 (NTIS)	Breary, Jonathan L.	A.F. Institute of Tech., Wright-Patterson AFB, OH School of Systems and Logistics	Organized a decision model to analyze a program and determine its appropriateness for MYP. Discusses advantages and disadvantages of MYP.
81 SEP 10	Status report on Implementation of GAO Audit Findings and Recommendations A107376 (NTIS)	N.A.	GAO Washington, D.C., Program Analysis Division	Contents includes Defense Multiyear contracting



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<u>Date</u>	<u>Document Title</u>	<u>Authors</u>	<u>Organization</u>	<u>Summary</u>
(1)	(2)	(2)	(3)	(4)
81 SEP 21	Multiyear Buys Face Hurdles in Congress Dialogue 1376294	Griffiths, David R.	Aviation Week v.115 p. 117	N.A.
81 SEP 28	Accelerated Tax Collection on MYC's Faces Stiffest Opposition Dialogue 0394607	Powell, Eileen Alt	Wall Street Journal v.105, p.3	N.A.
81 OCT	Why Enthusiasm at AFSC is "Great But Mixed" Dialogue 198634	N.A.	Government Executive vol. 13, No. 10, p. 32 - 35	AF Systems Command Department is streamlining its contracting process. MYP is one of three contract systems presented here.
81 NOV 23	Black Hawk Funding (Multi-year Contracting Refused) Dialogue 1400720	N.A.	Aviation Week, v. 115 p. 28	N.A.
81 DEC 2	Senate Proceedings Dialogue 038635	N.A.	CR, Source 97 - 173, Page SI4246	Amendment Withdrawn: Stevens SI4295 to permit MYP of Army UH-60A Black Hawk Helicopter
81 DEC 4	Senate Proceedings Dialogue 038942	N.A.	CR, Source 97 - 180, Page SI4485	Amendment Adopted: Tower SI4485, Permit MYC for weapon systems with termination liabilities under \$100M
81 DEC 08	Pentagon Seeks Boost in Budget Authority For 1983; Increase Of \$6 Billion Would Allow Advance Spending For MYC Dialogue 0419766	N.A.	Wall Street Journal, v.105, p. 2	N.A.

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<u>Date</u>	<u>Document Title</u> (1)	<u>Authors</u> (2)	<u>Organization</u> (3)	<u>Summary</u> (4)
81 DEC 23	Acquisition Improvement Task Force (final report) A124 531 (NTIS)	N.A.	Office of the Under Secretary of Defense for Research and Engineering	Greater use of Multi-year contracting to overcome barriers to implementation of the Acquisition Improvement Program
		— 1982 —		
82 JAN 26	Multiyear Air Force Pact Set Dialogue 0836790	N.A.	New York Times, v.131, p.29	N.A.
82 JAN 27	Multiyear Deal Starts on F-16s Dialogue 0837245	N.A.	New York Times, v.131, p.35	N.A.
82 JAN -	Multiyear Contracting for a Production of Defense Systems: A Primer (Interim Report) A116 205 (NTIS)	Dews, Edmund Rich, Michael	Rand Corp., Santa Monica, CA	Describes and explains rather than assesses or advocates. Emphasizes contracting for production rather than procurement of items on the shelf. Outlines criteria for MYC
82 FEB 01	F-16 MYP to Begin Dialogue 1830099	N.A.	Aviation Week, v.116, p.64	N.A.
82 MAR 01	Pentagon Planning Industrial Surge Capability Dialogue 1841074	Robinson, Clarence A., Jr.	Aviation Week, v.116, p.16	MYP will be based on the five year planning system



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Date	Document Title (1)	Authors (2)	Organization (3)	Summary (6)
82 MAR -	The Economics of Multiyear Contracting	Ugoff, Kathleen P. Thaler, Dick	Center for Naval Analyses Alexandria, VA, Marine Corps. Operations for Analysis Group	Analyzes the effects of legislative changes sought by DOD on the price of weapon systems. Discusses funding and budgeting practices as they relate to choosing the best type of contract.
82 APR 13	Army Grants Job of \$950 Million For Helicopters	N.A.	Wall Street Journal, v.106, p.8	N.A.
82 APR 29	GAO Analysis of Projects Proposed by DOD of Multi-year Contracting in its FY 1983 Budget Request	N.A.	GAO, Washington, D.C., Procurement, Logistics and Readiness Division	Assesses the appropriateness of twelve projects proposed for Multiyear contracting, the effect of Multiyear contracting on the Defense Budgets.
82 MAY 03	DOD is Serious about Multiyear Contracting	N.A.	Industry Week, v.213, p.22	N.A.
82 MAY 06	HEFLIN Opposes Administration Proposal to Eliminate the Completed Contract Method of Accounting for MYCs: Refs to 60 years of "Recognition as Appropriate Method" For Construction Industry Dialogue 07/09/81	N.A.	CR, Source 97 - All, Page 5626	N.A.

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82 MAY 26	C-2A Production Planning based on Multiyear Funds Dialogue 14663623	Mordoff, Keith F.	Aviation Week, v.116, p.48	N.A.
82 MAY -	Adopting to Multiyear Procurement Al16 497 (NTIS)	Knittle, Duane D. Mandler, Arthur J.	Army Research Office, Fort Lee, VA	Among others, objectives were to: Analyze advantages/disadvantages of various Multiyear techniques that could be employed under expected (Research undertaken May 1981) Legislation.
82 MAY -	Strategy Selection for the Production Phase of Weapon System Acquisition (Final Report) Al15 196 (NTIS)	Smith, Charles H. Lowe, Charles M., Jr.	Army Research Office, Fort Lee, VA	A stochastic network can be used to represent the dynamics of the acquisition process. Recommends the cost-saving behavior of multi-year contracts be investigated.
82 SPR	MYP: A Current Perspective Dialogue 221874	Rasch, R.H. Brearey, J.L.	Concepts, vol.5, No. 2, p. 39 - 53	The MYP is observed from several viewpoints including the Defense Industry, Congress, DOD, and GAO
82 SPR	Selecting Programs for MYP Dialogue 221875	LaFors, K.R.	Concepts, Vol.5, No. 2, p. 54 - 67	Proper screening and selection methods of candidate programs must be selected.
82 SPR	Concepts, The Journal of Defense Systems Management. Spring 1982, Vol. 5, No. 2. Al16 072 (NTIS)	N.A.	Defense Management College, Fort Benning, VA	Contents include: Multi-year Procurement; A Current Perspective; Selecting Programs for Multi-year Procurement.

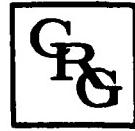


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ON MULTI-YEAR PROCUREMENT, 1986 TO AUGUST, 1988**

<u>Date</u>	<u>Document Title</u> <u>(1)</u>	<u>Authors</u> <u>(2)</u>	<u>Organization</u> <u>(3)</u>	<u>Summary</u> <u>(4)</u>
82 JUN 24	Further Discussion Regarding Recommendations Concerning Logistical Operations, Major Weapons Acquisitions And Manpower Issues. AII19 198 (NTIS)	N.A.	General Accounting Office, Washington, D.C.	The DOD's projected savings from multi-year contracting may not be as large as anticipated
82 JUN -	Defense Procurement: At Issue is Military and Economic Strength Dialogue 218071	Seaberg, R.I	Government Executive, vol. 14, No. 6, p.34 -36	NYC's have produced many benefits. Examples of achieving efficiency through legislation are given
82 JUL 23	House SC/Appropriations, Defense to Hold Hearing on MYP, and Defective Government Furnished Equipment and Materials Dialogue 088739	N.A.	CR, Source 97 - 097, Page D951	N.A.
82 JUL 27	House SC/Appropriations Held Hearing on MYP and Defective Government Furnished Materials; Testimony from DOD Officials. Dialogue 09062	N.A.	CR, Source 97 - 099 Page D966	N.A.
82 JUL 30	House SC/Appropriations to Hold Hearings on Multiyear Defense Procurement Review. Dialogue 093878	N.A.	CR, Source 97 - 102, Page D994	N.A.

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**SUMMARY OF THE LITERATURE
ON MULTI-YEAR PROCUREMENT, 1986 TO AUGUST, 1984**

Date	Document Title (1)	Authors (2)	Organization (3)	Summary (4)
82 AUG 04	House SC/Appropriations Held Hearing on Multiyear Defense Procurement Overview and Individual Programs. Dialogue 090427	N.A.	CR, Source 97 - 105, Page D1020	N.A.
82 AUG 16	Defense Department Undertakes Multiyear Ramjet Effort Dialogue 1896203	Clausen, Perrin	Aviation Week, V.117, p.52	N.A.
82 SUM	MYP in the First Reagan Defense Budget Dialogue 221286	Harshman, R.A.	Armed Forces Comptroller, vol. 27, No. 3, p. 25 - 28	Explanation and examples of MYP's. Discusses what future of MYP's depends on.
82 SUM	A Closer Look at Waste and Fraud in DOD Dialogue 221287	Moran, R.T.	Armed Forces Comptroller, vol. 27, No. 3, p. 29 - 33	The MYC system is one of two main categories of waste in DOD. Recommendations for dealing with waste
82 SUM	Enhanced MYP for Improving Weapon Systems Acquisition Dialogue 221392	Singer, A., Babson, G.D.	Concepts, vol. 5, No. 3, p. 112 - 129	MYP is examined in a manner understandable to those not in the procurement field. MYP Legislation is examined.
82 SEP -	A Life Cycle Cost Analysis for the Procurement of General Purpose Vehicles. A122 883 (NTIS)	Claypool, Scott K., Webb, Jeffrey B.	A.F. Institute of Tech., Wright-Patterson AFB, OH; School of Systems and Logistics	Results suggest that Total Life Cycle Cost (LCC) procurement strategies should be further investigated, especially for MYP's

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ON MULTI-YEAR PROCUREMENT, 1986 TO AUGUST, 1988**

Date	Document Title (1)	Authors (2)	Organization (3)	Summary (4)
82 SEP -	An Analysis Of The Predicted Benefits Of Multiyear Procurement A122 981 (NTIS)	Bergman's, Stevan B. Ebroch, Lawrence J.	A.F. Institute of Tech., Wright-Patterson AFB, OH. School of Systems and Logistics	The analysis supported: modernization of plant facilities, stabilized work force, lower production costs, advanced material buys, improved surge capability, increased standardization, improved productivity.
82 OCT 25	DOD Army Push Multi-year Rocket Program Dialogue 1322778	N.A.	Aviation Week, v.117, p.20	N.A.
82 DEC	Multi-year Procurement: Its Impact on the Subcontractor Level A126 699 (NTIS)	Madrid, James C.	Naval Postgraduate School, Monterey, CA	Impact of MYPs at the subcontractor level. Results of survey are presented. Recommendations are made for improving MYP implementation.
82 -	An Evaluation of the OMB Circular No. A-109 and Its Effectiveness in Improving Weapons Acquisition A1D82-29481	Smith, Gordon	N.A.	Recommended that MYC's for the development and production phases be entered and program managers reassigned only at the beginning of a new program phase.
83 JAN 26	Issues Concerning the DOD's Global Positioning System as it Enters Production A123 899 (NTIS)	N.A.	— 1983 — GAO, Washington, D.C., Mission Analysis Acquisition Division	The current multi-year cost estimate is uncertain, because it is not based on a firm price proposal and calculations for savings are unacceptable.

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Date	Document Title (1)	Authors (2)	Organization (3)	Summary (4)
83 JAN 26	Analysis of Cancellation and Termination Aspects of Multi-year procurement AI28 334 (NTIS)	Henry, F.J., Jr. Frazier, T.P. Dolan, M. Block, B.J.	Booz-Allen and Hamilton, Inc., Arlington, VA	Commodity Groups were identified for developing an actuarial account to enable DOD program managers to partially fund cancellation ceilings on multi-year procurements.
83 JAN 31	Boeing Proposes Multiyear KC-135R Purchase Dialogue 1560521	N.A.	Aviation Week, v.118, p.18	N.A.
83 JAN/FEB	Using MYP to Promote Defense Industry Investment Dialogue 242959	Raney, T.	Program Manager, v.12, No. 1, p.14 - 19	Investment theories of MYP are explained and discussed
83 FEB 21	USAF Projects Firm's Multi-year Acquisition Proposal for F100 Dialogue 1570765	N.A.	Aviation Week, v.118, p.24	N.A.
83 MAR	Lockheed - Georgia Brings Computing Power to the Manufacturing Floor Dialogue 83013715	Lundquist, Eric	Mini-Micro Systems, v.16N3, p.123 - 124	Lockheed-Georgia is participating in the USAF Technology Modernization Program which encourages capital investment. The program is geared toward ending stretched out programs and toward MYC, which encourage companies to make capital investments.
83 MAY -	Mobilization and Defense Management Technical Reports Series. Impact of Enhanced MYP on Defense Aquisition (EMYD) AI38 215 (NTIS)	Abel, W.R. Coomer, W.D. Hosmer, P.D. Pinizzotto, R.T. Rone, W.S.	Industrial College of the Armed Forces, Washington, D.C.	Investigates the problems and outstanding issues of EMYD.

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<u>Date</u>	<u>Document Title (1)</u>	<u>Author(s) (2)</u>	<u>Organization (3)</u>	<u>Summary (4)</u>
33 JUN 03	House SC/Appropriations to Hold Hearings on DOD MYP Dialogue 122650	N.A.	CR, Source 98 -077, p.D765	N.A.
33 JUN 09	Senate Proceedings Dialogue 126670	N.A.	CR, Source 98 - 081, p.S8029	Amendments Adopted: STEVENS SB067, \$185 Billion for B-1 Bomber MYP through FY88.
33 JUN 09	Senate Proceedings Dialogue 126674	N.A.	CR, Source 98 - 081, p.S8067	Senate adopted STEVENS amendment \$185 Billion for B-1 Bomber MYP through FY88.
33 JUN 09	House SC/Appropriations Defense, Held Hearing on MYP Program Dialogue 126787	N.A.	CR, Source 98 - 081, p.S8067	N.A.
33 JUN 14	House Proceedings Dialogue 127242	N.A.	CR, Source 98 - 081, p.H3901	Amendments McCLOSKEY H3911, Rejected: Prohibit MYP for B-1 Bomber.
33 JUN 28	House SC/Armed Services Approved D/Army Request for MYP of Single Channel Ground and Airborne Radio System, Dialogue 129971	N.A.	CR, Source 98 - 092, p.D913	N.A.
33 JUN 28	Full Committee Consideration of Army Request for MYP of the SINCGARS, GPO Item No. 1012-A, 1012-B	N.A.	US Congress House Committee on Armed Services	N.A.

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(1)	(2)	(2)	(3)	(4)
83 JUL 11	USAF Awards MYP in NAVSTAR Buy Dialogue 1683159	Smith, Bruce A.	Aviation Week, vol. 119, p. 45	N.A.
83 JUL 16	Senate Proceedings Dialogue 131639	N.A.	CR, Source 98 - 098, p. S9928	Amendments Rejected: NUNN S9928; Adjust Certain Multiyear Weapons Procurement Programs.
83 JUL 16	Senate Proceedings Dialogue 131712	N.A.	CR, Source 98 - 098, p. S10032	Submitted amendments to \$675, FY86 DOD Authorizations: NUNN (8), Adjust certain multiyear weapons procurements.
83 SUM	A Layman's Guide to MYP Dialogue 256781	Theon, M.L.	Armed Forces Comptroller, vol. 28, No. 3, p.28 -31	MYP is now getting attention. A major problem for MYP is funding.
83 SEP -	Analysis of Cost Estimating Methods at the Aeronautical Systems Division (ASD) A134 338 (NTIS)	Sanders, Thomas R., Jr.	A.F. Institute of Tech., Wright-Patterson AFB, OH. School of Systems and Logistics	Similarities/Differences in savings of various MYP programs at ASD attributable to different areas are determined, and general areas of cost savings are identified.
83 SEP -	Material Requirements Planning (MRP) within the Defense Industry: The Linkage to MYP A134 973 (NTIS)	Edgar, D.W.	A.F. Institute of Tech., Wright-Patterson AFB, OH. School of Systems and Logistics	One of the objectives was to see if MYP policies provide incentive for the industry to acquire a MRP system.

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<u>Date</u>	<u>Document Title</u> (1)	<u>Authors</u> (2)	<u>Organization</u> (3)	<u>Summary</u> (4)
81 SEP -	Multi-year Selection Criteria Analysis A135 638	Gray, D.L. Sanders, L.W.	A.F. Institute of Tech., Wright-Patterson AFB, OH; School of Systems and Logistics	Research findings: (1) MYP is not extensively used for DOD programs, (2) A common set of MYP contract and subcontractor characteristics were identified, (3) Ranking of 23 MYP selection criteria was developed for future MYP subcontracts.
83 SEP 05	Boeing Vertol Seeks Lift From Multiyear Plan Dialogue 83026303	Goldwater, Leslie	Iron Age, v.226, No. 23, p. 65, 67	Boeing Vertol Co., claims it can save the government \$74M by executing a \$738M MYP package.
83 SEP 30	House Proceedings Dialogue 140392	N.A.	CR, Source 98 - 129, p. H7818	House received and concurred in amdt. with further amdt re DOD MYP.
83 NOV 01	House Proceedings Dialogue 144252	N.A.	CR, Source 98 - 197, p. H934	Amendments Rejected: ADDABBO H8940, Delete funds for MYP of B-1B Bombers, while continuing FY88 funds for ten Bombers.
83 NOV 10	Senate Proceedings Dialogue 147127	N.A.	CR, Source 98 - 154, p. S1 5887	Amendments Adopted: HATFIELD S13851, Fund DOD at present level, prohibit MYP.
83 NOV 10	Senate Proceedings Dialogue 147129	N.A.	CR, Source 98 - 154, p. S1 5881	Senate adopted Hatfield: Fund DOD at present level, prohibit MYP, resumption of projects not funded in FY81.



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Date	Document Title	Authors	Organization	Summary
	(1)	(2)	(3)	(4)
83 NOV -	The Defense Improvement Program: Part 2 Status Report on Initiatives Dialogue 284603	Brabson, G.D	Contract Management, v.23, No. 11, p. 7 - 10	MYP has been adopted to stabilize the DOD's Acquisition Program.
83 NOV -	The Defense Acquisition Program: Part 3 Capuaci Initiatives - A Need for Perseverance Dialogue 284604	Adams, W.H., Jr.	Contract Manager, v.23, No. 11, p. 11 - 12	MYC's can provide initiative to help stability, but care must be taken to avoid selecting counterinitiative contract types.
83 DEC 01	Why a Strong America is Vital to World Trade - Our National Security and the IMF Dialogue 30022674	Stuart, Robert D., Jr.	Vital Speeches, v.50N4, p. 107 - 109	Imperative to support Reagan Administration's defense program. MYP contracts are needed to rebuild US defense capabilities.
83 WNT	Federal Financial Support of the Defense Industry: Indirect Methods Dialogue 39021136	Buczynski, Walter E.	National Management Contract Journal, v.16N2, p. 44 - 52	Federal administrative methods that indirectly remove risk from defense production contracts include, among others, MYCs. Law Legislation that increases the cancellation fee ceiling makes contract termination an expensive defense expenditure.
83 DEC 7-9	Industrial Incentives Modernization Program: An Experimental Effort to Improve Defense Contractor Productivity P002771 (NTIS)	Reeves, A.D.	Office of the Undersecretary of Defense for Research and Engineering, Washington, D.C. (Symposium Article)	Concentrates on the philosophy and concepts of the current test of Industrial Modernization Incentives Program (IMIP). Ties together related areas including MYP.

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<u>Date</u>	<u>Document Title</u> (1)	<u>Authors</u> (2)	<u>Organization</u> (3)	<u>Summary</u> (4)
83 DEC 7-9	MYP A Team Approach P002 780 (NTIS) A140 836 (NTIS)	Fromer, H.S. Sweeney, J.L.	Naval Command, Washington, D.C., (Symposium Article)	MYP has limited applicability but is realizing better than projected savings on selected programs. Stable modernization; increased efficiency
84 FEB	Justification of Estimates for FY1985 submitted to Congress 1986 A140 836 (NTIS)	N.A. — 1984 —	Missile Procurement A.F. Deputy Chief of Staff Research, Development and Acquisition. Washington, D.C.	Includes \$81,600,000 for the purchase of DSCS III under a MYP.
84 FEB -	Tri-Service DOD Program Provides Incentives for Factory Modernization Dialogue 84009949	Simson, Richard A. Reeves, Douglas A.	Industrial Engineering, v.16N2, p. 54 - 61	MIMP is an important part of three major DOD goals, one of which is MYP.
84 MAY 03	House SC/Appropriations, Defense, to Hold Hearings on Warranties, Spare Parts and MYP Dialogue 170934	N.A.	CR, Source 98 - 055, p. D591	N.A.
84 MAY 09	Analysis of Benefits Realized From Multiyear Contracting for the Black Hawk Helicopter. A141-424 (NTIS)	N.A.	GAO, Washington, D.C., National Security and International Affairs Division	Army estimated 7.9% savings; GAO estimated 4.6%. GAO accounted for loss of tax revenues and for cost of providing funds earlier under the MHC. No evidence of enhanced industrial base.

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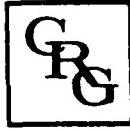


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30 MAY 10	House SC/Appropriations held hearing on DOD Warranties, Spare Parts and MYP Dialogue 172038	N.A.	CR, Source 98 - 060, P. D629	N.A.
30 SPR	Reforming the Defense Budget Process Dialogue 84014605	Gransler, Jacques S.	Public Interest, N75 p. 62 - 75	A multi-year defense budget and long range DOD planning are crucial to the stability, coherence and rationality of the defense budget process. Improvements through Congressional budget reforms are recommended
30 JUL 23	GE Gets Work For \$1.58 Billion from AF; Firm To Provide 423 Engineers for B1-B Bombers Under a MYC. (includes other defense contracts) Dialogue 088111	N.A.	Wall Street Journal, p. 8-9	N.A.

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ABBREVIATIONS

AF	Air Force
CBO	Congressional Budget Office
CR	Congressional Record
DOD	Department of Defense
DSOCS III	Phase III of Defense Satellite Communications System
DTIC	Defense Technical Information Center
FY	Fiscal Year
GAO	General Accounting Office
IMIP	Industrial Modernization Incentives Program
MYC	Multiyear Contract
MYP	Multiyear Procurement
NA	Not Available
SINGARS	Single Channel Ground and Airborne Radio System
SPR	Spring
SUM	Summer
WNT	Winter

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